DOCUMENT RESUME

ED 376 641	EC 303 468

AUTHOR	Rice, Mabel L.; O'Brien, Marion
TITLE	Kansas Early Childhood Research Institute on Transitions. Final Report.
INSTITUTION	Kansas Univ., Lawrence. Kansas Early Childhood Research Inst.
SPONS AGENCY	Special Education Programs (ED/OSERS), Washington, DC.
PUB DATE	Dec 93
CONTRACT	H024U80001
NOTE	466p.; For the separately-published 31-page executive summary, see EC 303 469.
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01/PC19 Plus Postage.
DESCRIPTORS	Adjustment (to Environment); *Developmental Disabilities; *Disabilities; *Early Childhood Education; *Early Intervention; Elementary School Students; Family Programs; Infants; Interdisciplinary Approach; Preschool Children; Preschool Education; Primary Education; *Regular and Special Education Relationship; Research Projects; Toddlers; *Transitional Programs
IDENTIFIERS	*Kansas Early Childhood Research Institute

ABSTRACT

This final report describes research projects and other activities of the Kansas Early Childhood Research Institute (KECRI), a multi-investigator, cross-disciplinary Institute focusing on successful transitions for young (birth to age 8) children with disabilities or developmental delays. Interventions were developed, evaluated, and disseminated which focused on helping professionals from a variety of disciplines, family members, and children. Eleven individual research projects focused on issues concerning transition in infancy (hospital to home and infant services), the preschool years (home to preschool and specialized to integrated services and classrooms), and the primary grades (entry to public schools). An overarching longitudinal study is continuing. Dissemination of KECRI work has been by more than 200 published articles and almost 300 conference presentations. In this report, preliminary sections present an introduction and describe the Institute's mission, objectives, activities and administrative organization. Research project reports of five major projects are then presented and comprise the bulk of the report. Sections following the project reports include a product list and information on dissemination, training, personnel, and the Institute's impact. Individual project reports contain references. (DB)

****
*   Reproductions supplied by EDRS are the best that can be made   *
*   from the original document.   *
****

EC

ED 376 641

KECRI

Kansas Early Childhood Research Institute on Transitions

University of Kansas

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

Final Report

December 1993

Co-Principal Investigators:

Mabel L. Rice, Ph.D.
Marion O'Brien, Ph.D.

Award Number: H024U80001
CFDA: 84.024U

EC 303 468

BEST COPY AVAILABLE

1. ABSTRACT

The Kansas Early Childhood Research Institute, a multi-investigator, cross-disciplinary Institute, has carried out research studies designed to promote successful transitions for handicapped children from birth to age eight. The Institute projects addressed the need to develop and validate procedures that facilitate transitions during the early childhood period, with transitions defined as times of change of service providers and/or change in service settings. The transition procedures developed take into account the psychological and emotional needs of the child and the family, as well as the child skills and knowledge necessary to negotiate a transition, optimal timing for transition intervention, and incorporation of transition strategies into individualized family service plans and individualized education programs.

Problems associated with transition affect children with all levels and types of handicapping conditions, the emotional and psychological wellbeing of their families, and the quality and continuity of services provided by agencies. Within the KECRI model of transitions (Rice & O'Brien, 1990) change in service providers is one source of influence on children and families but must be experienced in conjunction with the broader social and cultural context in which children, families, and service providers live and work.

Within this framework, the KECRI has developed, evaluated, and disseminated strategies to improve the transition experiences of young children with handicaps and their families. In general, interventions were designed to meet three objectives: (1) to help professionals from a variety of disciplines plan and implement transition practices that minimize disruption in children's developmental and educational programs; (2) to help family members, whose involvement in planning current and future services for the child is crucial to the success of such services; and (3) to help children develop the competencies to adjust to new environments.

The goals of the KECRI have been addressed through components focusing on research, replication and evaluation, dissemination, and training. Eleven individual research projects were conducted by Institute core investigators, who are University of Kansas faculty members from diverse disciplines. The projects focused on issues concerning transition in infancy (hospital to home and infant services), the preschool years (home to preschool and specialized to integrated services and classrooms), and the primary grades (entry to public schools). In addition, individual research projects targeted child, family, and agency transition issues that span these age ranges. Overarching the individual projects is a longitudinal research investigation that has provided descriptive data on the transition experiences of families over the entire 0 - 8 age span and the relationship of family and child variables to the identification of problems associated with transitions. Replication, validation, and field testing of the findings, instruments, and/or transition strategies were included in each research component.

The work of the KECRI has been widely disseminated, as is evidenced by the more than 200 published articles and almost 300 conference presentations. Through the permanent products of the Institute, and through the continued work of the many students and service providers who have received training under the Institute's auspices, the KECRI will have a wide-ranging and long-term impact on special education practice and on the quality of services for children with disabilities or developmental delays and their families.

KANSAS EARLY CHILDHOOD RESEARCH INSTITUTE
1993 FINAL REPORT

PR/Award Number: H024U80001
CFDA Number: 84.024U

Section

3. Introduction
4. Institute Mission, Objectives, Activities
5. Administrative Organization
6. Project Reports:

    Project 1.2 (Meck)

    Planning transition from the neonatal intensive care unit to the home.

    Project 1.3 (McCluskey-Fawcett, O'Brien)

    In-home intervention to facilitate the transition from NICU to home.

    Project 2.2 (Thompson, Wegner)

    Transitioning preschool children with severe and profound multiple disabilities from a special education classroom program into mainstream Montessori preschool and child care programs.

    Project 2.3 (Rice, Wilcox)

    Verbal interactive skills training for transitions.

    Project 3.1 (Carta, Atwater, Greenwood)

    Programming successful classroom transitions: Assessment of children's survival skills and classroom requirements.

    Project 3.2 (Catts)

    Promoting successful transition to the primary grades: Prediction of reading problems in children with speech and language impairments.

    Project 4.2 (Dunn)

    Role of professionals in successful transitions.

    Project 5.0 (O'Brien, Rice, Thiele)

    The longitudinal study of Families And Children in Transition (The FACT Study).

7. Product List
8. Dissemination
9. Training
10. Personnel
11. Institute Impact
12. Appendix (separate volume)

3. INTRODUCTION

The Kansas Early Childhood Research Institute (KECRI) has addressed transition issues faced by children across the 0 - 8 age span who have a disability or are at risk for developmental delay, faced by their families, and faced by the agencies that provide services to children with disabilities in the early childhood period. The KECRI research has been based upon the recognition that transition periods, while associated with growth and opportunity, also require accommodations and adaptations that are often disruptive and stressful.

To the young child with a disability, from whom accommodation and adaptation are constantly required, the addition of new demands placed by a new environment may be overwhelming. To the child's family, as well, transitions only add to already difficult day-to-day problems. Changes in services and/or personnel associated with transitions, along with the new demands made by changes in routines that affect the entire family, may actually reduce the parent's ability to cope, create resistance to planning, promote defensive behavior, and result in serious misunderstandings between parents and service providers as well as disruption in the child's educational program. The transition needs of these children and families are often overlooked by professionals providing medical, social, or educational services to children and families. Transitions resulting from changes in the placement of children, changes in the nature or form of needed services, or changes in personnel within existing service agencies place added burdens on already overworked staff. Further, the extensive need for communication during periods of transition requires time, patience, and resources that may be in short supply.

During the past five years, the KECRI has brought together researchers from a variety of disciplines to focus on the needs and concerns of young children with disabilities and their families during periods of transition from one set of services to another. The set of research projects conducted by the KECRI has addressed the full range of issues surrounding the transitions from hospital to home and community services, from preschool into kindergarten and the primary grades, and from segregated to integrated services. While the primary focus of the KECRI has been the experiences of children and families, component studies have also examined issues facing service providers who implement transitions. In addition, a longitudinal study is underway to track the service histories and transition-related concerns of a group of 100 children with identified disabilities or at high risk for developmental delay.

Taken together, these projects have enhanced our knowledge of issues important to successful transitions across the early childhood period.

Each of the component projects of the KECRI has also developed and disseminated products describing successful transition practices and procedures, and has trained students and service providers in effective strategies for transition. Thus, the work of the KECRI will be continued through implementation of the transition interventions developed in these projects in a wide range of programs and disciplines.

4. INSTITUTE MISSION, OBJECTIVES, ACTIVITIES

GOALS OF THE KECRI

1. **Develop and evaluate solutions to problems created by the transitions faced by young children with disabilities and their families.**

    1-1. Develop and evaluate intervention strategies to help high-risk infants and parents plan for and successfully manage transition from hospital to home and into infant services.

    1-2. Develop and evaluate intervention strategies to help preschool children with disabilities and their families plan for and successfully manage transition from home to preschool and between classrooms, including the transition from specialized to integrated services.

    1-3. Develop and evaluate intervention strategies to help kindergarten and primary children with disabilities and their families plan for and successfully manage transition into the public schools and between public school classrooms.

2. **Develop and evaluate procedures and practices to help service providers from a variety of programs and disciplines provide needed transition planning and implementation services to young children with disabilities and their families.**

    2-1. Identify specific transition intervention needs and the appropriate timing of intervention services.

    2-2. Develop methods to assess skills required by particular environments and environmental accommodations to promote successful transition of children with disabilities into those environments.

    2-3. Develop strategies for promoting interagency cooperation and communication as well as procedures for evaluating the success of transition practices.

    2-4. Develop strategies for involving families in transition planning and including transition intervention objectives into individualized family service plans.

3. **Train graduate students and professionals across a variety of disciplines in procedures and practices that promote successful transition of young children with disabilities from one set of services to another.**

4. **Disseminate training materials, curriculum procedures, transition intervention practices, family involvement procedures, and transition information to service providers, families, and university training programs.**

IMPORTANCE AND IMPACT

The KECRI's research program responded to the following priority and emphasis areas identified in the original call for proposals for an Early Childhood Institute focused on Transitions:

CHILD-FOCUSED	▸ Procedures have been developed and evaluated to facilitate transitions during the early childhood period, birth to eight years of age;
SERVICES/ PERSONNEL	▸ Procedures have been developed to facilitate transitions that occur when there are changes in services and in personnel who coordinate and provide services;
BETWEEN SETTINGS	▸ Procedures have been developed to address transitions that occur between hospital and home, home and infant services, infant services and preschool services, preschool services and primary school, primary school grades, and nonintegrated-integrated programs;
PSYCHO-SOCIAL CHILD & FAMILY	▸ Procedures have been developed that are individualized to meet the psychological and emotional needs as well as the service needs of the child and family;
CHILD COMPETENCIES & SETTING ACCOMMODATIONS	▸ Procedures have been designed to help children develop the knowledge, skills, and competencies needed in new settings as well as to describe the accommodations in both current and future environments that promote successful transitions;
AGE AT INTERVENTION	▸ Procedures have been developed that identify when implementation is most effective and with whom implementation is most effective;
IFSP STRATEGIES	▸ Procedures have been developed that serve as models and strategies for including transitional intervention objectives in individualized family service plans and individualized education programs;
METHODS & MATERIALS	▸ Procedures are accompanied by methods and materials that service providers can use to monitor outcomes of interventions.

OVERVIEW OF THE INSTITUTE

The work of the KECRI addressed the full scope of the goals. Eleven individual research projects were carried out; in addition, as part of the central operations of the KECRI, a longitudinal research project is continuing and provides descriptive data on the services provided to and transition experiences of families of children with disabilities or at high risk of developmental delay from birth into school. Training and dissemination activities have been integral components of the research projects and central to the work of the Institute.

The collective contribution of the Institute is the identification and development of procedures to facilitate transitions during the early childhood period, birth to eight years of age, across differing service settings, disabilities and risk conditions, and family circumstances. The collective efforts of the KECRI extend the previously available information about transitions in several ways. Among the accomplishments of the KECRI are the development of transition planners for infants and their families (Project 1.2, Meck et al.); a more complete description of the survival skills necessary for preschool and kindergarten settings (Project 3.1, Carta & Greenwood; Project 2.3, Rice & Wilcox; 2.2, Thompson & Wegner), and the provision of descriptions at the infancy level of parents' and health care providers' perceptions of transition needs (Project 1.2, Meck et al.; 1.3, McCluskey-Fawcett & O'Brien).

Through the work of the KECRI, dimensions of child competencies that impact on transitions, such as verbal interaction and linguistic/phonological abilities, multiple and profound disabilities, and social abilities have been explored (Projects 2.3, Rice & Wilcox; 3.2, Catts; 2.2, Thompson & Wegner; 2.4, Etzel & LeBlanc). Consideration of these particular child competencies has been found to be essential in the design of individualized transition strategies. Several of the KECRI projects have evaluated the use of videotapes as a way of providing transition intervention with parents of children who have disabilities or are at risk (Projects 1.1, Evans; 1.3, McCluskey-Fawcett & O'Brien). Other projects have explored intervention procedures that require accommodation on the part of the service providers and service settings, in contrast to strategies which place much of the accommodation burden on children or their parents (cf. Rule, Fiechtl, & Innocenti, 1990) (Projects 2.3, Rice & Wilcox; 2.2, Thompson & Wegner; Project 3.2, Catts; Project 4.2, Dunn). Thus, the full set of studies included in the KECRI has addressed all the dimensions included in transitions.

THE KECRI MODEL OF TRANSITIONS

The work of the KECRI has integrated transition issues from the perspective of children, families, and service providers. In order to do so, a theoretical framework was needed that allowed for an operational definition of transition and its outcomes, and the ways in which children, families, and professionals interact. Following Bronfenbrenner (1986) and Gallimore, Weisner, Kaufman, and Bernheimer (1989), Rice and O'Brien (1990) described a transition model in which a child is viewed as a member of a family which is in turn part of a broader social and cultural community. Within this model, families are not passive in the face of outside social and economic forces, but are instead agents of change, capable of taking action to modify or counteract outside influences.

Transitions, then, are one source of influence on families of children with special needs. Their success, in terms of promoting child progress, depends on a number of factors both within and outside the family. The conceptual framework underlying the KECRI approach to transitions includes the following:

1. Every transition or change in service providers has multiple influences on a family. For example, a transition from home to preschool may bring not only changes in expectations for the child's behavior, but also changes in the family's financial resources, changes in transportation demands, and changes in the child's opportunities to play with neighborhood children.

2. Transitions are difficult primarily because they require accommodations in daily routines for everyone involved: child, family, and service providers. All three must make adjustments involving new settings, unfamiliar people, unfamiliar behavioral expectations, and variations in the daily "business" of living.

3. The impact of a transition on each person involved may be evaluated by the number of accommodations required. The fewer changes needed in the child's behavior, the easier the transition will be for him or her. Similarly, the fewer accommodations a family must make, the easier the family's adjustment to the new situation will be.

4. One measure of the success of a transition intervention is the extent to which it encourages accommodations that are sustainable by the family over time. For most families, transition interventions should be targeted to minimize the impact on existing family routines, or make those routines simpler and more manageable.

5. Accommodations required by transitions are not necessarily negative. When a transition places a child in a more appropriate setting, for example, the child's progress and happiness will typically contribute positively to the family's perception of the success of the transition.

6. Interventions to promote positive outcomes and reduce the negative impact of transitions may need to involve both distal (e.g., financial policy) and proximal (e.g., information about how to care for a baby going home from the NICU) aspects. In addition, prediction of transition impact must be made in terms of both individual factors and interactive combinations of factors.

7. Agencies and individuals who provide transition services to children and families are also affected in multiple ways by transitions. The nature, timing, and quality of their efforts to facilitate transitions are influenced by the extent of accommodations required on their part as well as their perceptions of the strengths and needs of children and families.

8. One factor that influences the difficulty of any transition is the child. The developmental status of the child affects the ease or difficulty of a transition, particularly with regard to the amount of involvement required by the family and the ability of the child to understand and help plan for change.

9. Whether a transition is normative or non-normative (Bronfenbrenner, 1986) strongly influences parents' and service providers' perceptions of the transition. Normative transitions are expected ones, such as taking a new baby home from the hospital after birth, the entrance to school, puberty, marriage, and so on. Non-normative transitions are unexpected, such as the birth of a baby with a disability, identification of a disabling condition during the preschool years, or an unexpected shift in service settings.
   Such transitions are always stressful because there is little or no opportunity for parents or children to prepare for them. Normative transitions are not without stress, either. To the extent that normative transitions are socially expected, parents and service providers often fail to anticipate the need for accommodations by the child, the family, or the service setting. Thus, all transitions, whether expected or sudden, require planning if they are to be completed successfully.

This model framework has been applied across the full scope of the KECRI projects and the age range of birth to 8 years of age, covering children's transition from hospital to home, infant services to preschool, preschool to primary school, and nonintegrated to integrated programs, from varying service settings and professional disciplines, and for a variety of disabilities. The transition interventions that have been developed vary according to the age of the children, the targeted goals, and the service settings. Furthermore, the research methodology used has varied as a function of the particular questions of study.

It has become clear that there are multiple interactions among factors that affect transitions. As Bronfenbrenner (1986) has pointed out, the personal characteristics of a family member, such as a child with special needs, influence the processes by which the environment affects families, in what is termed a person-process-content model. The work of the KECRI has been directed toward the identification of transition processes that are appropriate for intervention with particular children, and that can be carried out by families and service providers.

ORGANIZATION OF THIS REPORT

The results of each of the individual components within the KECRI are reported below. As a collective enterprise, the KECRI conducted 11 research projects plus an overarching longitudinal study, trained 63 graduate students, disseminated findings at 308 conferences, produced a Newsletter, and published 113 papers in refereed journals.

The next section of this report describes the administrative organization of the Institute. In Section 6 are the reports from each of the seven individual projects that continued throughout the full five years of the Institute. (Projects 1.1 [Evans], 2.1 [Fowler & Cooper], 2.4 [Etzel & LeBlanc], and 4.1 [Fawcett & Suarez] were completed in previous years and final reports for those projects have already been submitted.) A preliminary report is provided for Project 5.0, the Families and Children in Transition Longitudinal Study (FACT), which is still in progress. Within each project's report, topics are ordered as follows:

- Targeted Transition Problem
- Objectives
- Background
- Methods
- Outcomes
- Impact
- Recommendations

Tables, figures and references follow each project report.

Section 7 lists all products generated by the KECRI, while methods of dissemination of Institute findings and products are explained in Section 8. Section 9 describes KECRI training activities. Section 10 provides a list of Institute personnel. The final section summarizes the importance of the Institute's findings and products for the field of early education of children with disabilities. Appendices containing all Institute products are attached.

A separate volume, the Executive Summary, provides an overview of the work of the KECRI and brief descriptions of the research projects, main findings, and implications for educational policy and practice.

REFERENCES

Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. Developmental Psychology, 22, 723-742.

Gallimore, R., Weisner, T.S., Kaufman, S.Z., & Bernheimer, L.P. (1989). The social construction of ecocultural niches: Family accommodation of developmentally delayed children. Unpublished manuscript.

Rice, M., & O'Brien, M. (1990). Transitions: Times of change and accommodation. Topics in Early Childhood Special Education, 19, 1-14.

Rule, S., Fiechtl, B.J., & Innocenti, M.S. (1990). Preparation for transition to mainstreamed post-preschool environments: Development of a survival skills curriculum. Topics in Early Childhood Special Education: Transitions, 9(4), 78-90.

5. ADMINISTRATIVE ORGANIZATION

Co-Directors:	Mabel L. Rice, Ph.D. Department of Speech-Language-Hearing Marion O'Brien, Ph.D. Department of Human Development & Family Life
Assistant Director/ Dissemination Coordinator:	Carolyn Roy, Ph.D.
Program Assistant:	Janice Chazdon
Administrative Assistant:	Patsy Woods

The Kansas Early Childhood Research Institute's administrative plan was based upon the collaborative efforts of faculty drawn from the Departments of Human Development and Family Life, Special Education, Speech-Language-Hearing, Psychology, and Sociology on the University of Kansas Lawrence campus and from Occupational Therapy Education and the Children's Rehabilitation Unit at the University of Kansas Medical Center in Kansas City, as well as administrative staff of the University's Schiefelbusch Institute for Life Span Studies. In addition, a National Advisory Board and a Regional Advisory Board were established at the start of the Institute. Members of these boards are listed in Section 10 of this report. Individual projects also established their own advisory boards to assist in the projects' specific research.

The goal of the administrative plan has been to operationalize an approach to management that would allow full attainment of the benefits that derive from research in an Institute setting rather than in separate projects. Such benefits include the capability to (a) sustain programmatic research with a targeted focus, (b) generate research strategies based upon the cumulative findings of related but independent investigations, (c) create a climate conducive to research and research training that is reinforcing to all participants, (d) systematically disseminate resulting products to appropriate consumers, and (e) establish affiliations with other national research and outreach organizations that share similar interests.

Specific management objectives were:

- to provide administrative support to the research personnel of the Institute to facilitate their research on transitions
- to provide other support services necessary for carrying out the research plans
- to coordinate the research and dissemination activities across projects
- to provide an effective interface with the regulations and policy issues of the University setting and the funding agency
- to enhance research efforts in transition through effective technological support.

These objectives were accomplished through the following procedures.

COORDINATION

One of the major challenges of a multi-investigator, cross-disciplinary endeavor of this nature is communication among the various individuals and sites involved. The Institute's view has been that coordination of efforts by member researchers, rather than the specification "from above" of rules by which members must operate, enhances the individual and collective efforts of all. This philosophy has been operationalized effectively in the following ways:

1. INVOLVEMENT OF RESEARCHERS IN DECISION-MAKING
    a. Each investigator has been responsible for planning and implementing a programmatic study focusing on an area of transition defined in the original application. Investigators' responsibilities have included planning their study's research, supervising their staff and graduate students, planning the budget for the study, and monitoring the study's expenditures.
    b. Investigators have participated in planning and discussions regarding data collection and analysis for the FACT Study (Project 5.0) as needed.
2. STAFF INVOLVEMENT IN COORDINATION
    a. Institute core administrative staff meetings have been held regularly throughout to report on overall Institute tasks accomplished, examine tasks in progress, and prepare for future tasks. These meetings provided the bases for coordination of general Institute activities with specific individual project activities.
    b. Informal communications occurred between individual projects in order to link their research and share resources where possible and appropriate and in order to have a better understanding of each other's work.
    c. Core staff talked with investigators, staff and students from individual projects as needed to discuss their research to date, their research plans, and/or their dissemination plans.
    d. The dissemination staff maintained the Institute's in- house library, containing literature resources for consultation by project personnel as well as materials produced by Institute projects. As part of this service, dissemination staff reviewed articles and notes from periodicals, brochures, catalogues, etc. for items relevant to the Institute's mission and to individual projects' research and training activities; relevant items were distributed as appropriate and also were filed in the Institute library.
    e. Dissemination staff consulted with individual projects as needed regarding their dissemination plans and other issues relevant to dissemination.

3. MINIMAL BUREAUCRATIC PROCEDURES

The numerous bureaucratic procedures that accompany day-to-day management of a research endeavor of this size have been handled by the Co-Directors, Assistant Director, Program Assistant, Administrative Assistant, student office assistants, and the staff of the Institute for Life Span Studies (the KECRI's administrative organization). This has allowed the investigators to proceed with their research without having to be directly involved in time-consuming paperwork, and also provides a consistent, trained and experienced group of support individuals to facilitate KECRI research efforts.

4. MAINTENANCE OF AN EFFICIENT COMMUNICATION SYSTEM

a. Over the KECRI's five years, 14 All-Institute meetings were held. These occasions provided a forum for members of each research project to present findings or questions to the entire group of KECRI investigators, staff and trainees and allowed for joint discussion of research and transition issues and implications of findings among all Institute personnel. This meeting format has been an efficient way of maintaining communication across projects, ensuring a multi-disciplinary approach, and exposing trainees to a broad range of research methods.

b. In addition to the All-Institute occasions in which members of the KECRI came together to discuss specific aspects of the KECRI research, a number of visiting scholars in fields related to the KECRI work have conducted presentations or workshops at meetings of the entire Institute (often held jointly with other University units such as the Child Language Program). Visiting speakers include Nick Ellis (Lecturer, Department of Psychology, University College of North Wales, Bangor, U.K.), Susan Fowler (Professor, Department of Special Education, University of Illinois at Urbana-Champaign), Ronald Gallimore (Professor, School of Psychiatry and Graduate Education, UCLA), Judith Moler (Director of Local Initiatives, Kansas Corporation for Change), Catherine Snow (Professor, Graduate School of Education at Harvard University), and Jeffrey Sokolov (Professor, Graduate School of Education at Harvard University).

c One National and two Regional Advisory Board meetings were held with all Institute personnel to update the board members on the work of the KECRI and solicit input from the advisory boards regarding research and transition questions.

d. Several Training meetings were held to allow the Institute graduate trainees from all projects to learn about each other's research projects. The usual format for these meetings was for the Institute Co-Directors to give a presentation describing the work of the Institute and facilitate discussion among trainees.

e. Core administrative staff (Co-Directors and dissemination and data personnel) held occasional formal meetings with investigators and trainees of each project to discuss individual projects. Core staff also maintained regular communication with all projects on an informal, as-needed basis by personal contact, telephone, written correspondence, and electronic mail.

f. The core administrative staff coordinated progress reports and research plans from the projects and from the graduate trainees.

g. Computer network connections were set up for electronic mail communication among core administrative staff and projects, and access to the University of Kansas mainframe computers, modem banks, and national and international networks. Voice mail telephone communications were also installed.

5. RESEARCHERS' COMMITMENT TO THE MISSION OF THE INSTITUTE

a. Institute personnel (investigators, staff, and graduate trainees) participated in the All-Institute meetings and Training meetings. These occasions included discussions of issues relevant to the Institute's goals.

b. All project personnel have made themselves available for discussions with core staff or with members of the Institute's other projects as needed.

c. Investigators, staff, and graduate trainees have been timely in their preparation, completion, and submission of information, reports, and other materials requested of them.

6. FACILITATION OF RESEARCH THROUGH MANAGEMENT SUPPORT

a. The Schiefelbusch Institute for Life Span Studies at the University of Kansas has provided a range of support functions involving the University administrative offices to facilitate the work of the Institute.

b. The core administrative staff, along with the Institute for Life Span Studies staff, have served as an interface among the University of Kansas, the U.S. Department of Education, the individual research projects, and their University departments regarding the regulations and policy issues of the University settings and the funding agency.

ADVISORY BOARDS

The National Advisory Board comprised seven experts from around the U.S. in a variety of fields relating to transitions among service providers for young children with special needs and their families. The Regional Advisory Board consisted of 17 experts from central and north-east Kansas.

The duties of these boards were designed to be both informational and advisory. Three Advisory Board meetings were held, as described above under Coordination. It was decided, however, that discussion with advisory board members individually was more fruitful than mass meetings of the entire advisory board with the entire Institute. Institute investigators, staff and graduate trainees were surveyed to determine which National Advisory Board member(s) they would like to consult with and on what topics, and individual members of the National board visited the Institute to consult with the core staff and personnel from relevant projects. Visits to the KECRI were also made by members of the Regional Advisory Board. Besides formal exchanges, informal communication between advisory board members and individual investigators occurred throughout the Institute via routine correspondence, electronic mail, and consultations at conferences and conventions attended by both board and Institute members.

GRADUATE TRAINEES

Graduate student trainees were appointed by principal investigators to be affiliated with the individual KECRI research projects. To promote communication among trainees on different projects, and between trainees and the Institute core staff, two student representatives were selected to link between trainees and core staff. The Assistant Director was designated liaison between the KECRI core and the trainees.

PROJECT 1.2

PLANNING THE TRANSITION FROM THE NEONATAL INTENSIVE CARE UNIT TO THE HOME

Nancy E. Meck, Ph.D., Child Development Unit/KUAP

TARGETED TRANSITION PROBLEM

Due to significant advances in medical care and technology, the survival rate of premature and high-risk infants has increased dramatically in recent years. Many of these infants spend their first two to twelve (or more) weeks of life in a Neonatal Intensive Care Unit (NICU), then make a transition from the hospital to home. This transition from a NICU to the home signifies the transfer of primary care for the newborn child from professional medical staff to the parents. Once home, the child and family may need any number of additional services to optimize the child's and the family's outcome following the stress of early hospitalization. Historically, a method of identifying, coordinating, and accessing the services needed has not been available.

Numerous studies have been reported on parents' perceptions of the time their child spent in the NICU (Affleck, Tennen, Rowe, & Higgins, 1990; Flynn & McCollum, 1989; Kenner, 1990), on the effect of stress on the parent and child (Crnic, Greenberg, Ragozin, Robinson, & Basham, 1983; Field, 1990), on staff interventions with families in the NICU (Fajardo, 1988; Gorski, 1985; Hansen, Young, & Carden, 1986; VandenBerg, 1985), on parent's satisfaction with their child's discharge from the NICU (Arenson, 1988), and on the transition process, in general, from one service delivery system to another (Fowler, Hains, & Rosenkoetter, 1990; Chandler, Fowler, & Lubeck, 1986).

The overall goal of this project was to facilitate the transition from the NICU to the home for high-risk infants and their families by improving the planning strategies used by families and professionals.

OBJECTIVES

1.2-1 To administer a Retrospective Transition Interview (RTI) to obtain information about the transition from NICU to home from the family's point-of-view.

1.2-2 To develop an NICU Individualized Transition Planner to identify family and child needs and help families communicate those needs to professionals.

1.2-3 To evaluate the effectiveness of the NICU Individualized Transition Planner in facilitating the transition from the NICU to home.

1.2-4 To develop a procedural manual on the use of the NICU Individualized Transition Planner for NICU medical professionals who wish to incorporate this instrument in their discharge planning.

BACKGROUND

Technological advances in neonatal care enable very premature infants to survive today. Yet our society has been slow to address the informational, emotional and support needs of families of infants in the NICU (Meck, Fowler, Claflin, & Rasmussen (in preparation). Parents continue to report that they felt helpless and powerless during their child's hospitalization (Darling, 1983); and that they would have liked more information both during and following their child's hospitalization (Bernbaum & Hoffman-Williamson, 1986). Emotional needs include more involvement in their child's caregiving. Information needs have included learning more about their child's growth and development, about resources in the community to support them in the care of their infants, and about strategies for managing their child's often major medical expenses (Baker, Kuhlmann, & Magliaro, 1989).

The need for emotional support and for information may differ over the course of the infant's stay in the NICU and may depend on the stage of hospitalization (Bull & Lawrence, 1985). At least two stages characterize the NICU hospitalization: the critical stage and the growing stage. Transition from the NICU and its planning may be considered a third stage (Flynn & McCollum, 1989). During the critical stage, the focus of hospital staff is on the survival of the infant. Parents often are given information that is highly technical, at a time when they experience severe stress over their child's acute condition and survival. Consequently, parents may assimilate little of what they are told. When the critical stage has passed, parents become significantly more involved in their child's caregiving. At the same time, their need and interest in information about their child's care, growth and development increases (Bull & Lawrence, 1985).

Research has demonstrated that parents benefit from caring for their premature infant during this growing stage. The caregiving can facilitate parent attachment, increase parents' feelings of competence, and renew their sense of control (Flynn & McCollum, 1989; Bruder & Walker, 1990; McCluskey-Fawcett, O'Brien, Robinson, & Asay, 1992). The mother's perceived sense of control in the NICU is correlated with her perceptions of her child's developmental progress (Affleck, Tennen, & Gershman, 1985). The provision of information to parents can be critical to their understanding of their infant's progress and of the NICU environment. For example, Hughes (1992) reported that parent perception of equipment in the NICU was influenced by information regarding its purpose and function. Parents reported experiencing less stress after they received information and better understood the lifesaving function of the equipment.

In addition to information regarding the care of their child in the NICU, many parents have questions regarding their child's future developmental progress and medical needs, their care at home, and resources to support them in that care (Bruder & Walker, 1990). The transition home, although eagerly anticipated, may also be overwhelming for parents, who will assume full care of an infant whom they and the medical staff have regarded for weeks or months as medically fragile (Easterbrooks, 1988). Parents may vary in the amount of information and support they need or want (Hanline & Deppe, 1990). Some may be able to identify precisely what they want and others may be less certain. The pace at which parents can absorb information and learn necessary medical procedures (e.g., CPR or medication administration) also varies (McCluskey-Fawcett, O'Brien, Robinson, & Asay, 1992; Robinson, 1991).

Transition planning and teaching presents an opportunity to meet these needs on an individualized basis. Transition planning is a team approach in which parents and health, education and social service personnel work together to prepare for a child's discharge from the NICU to home and to community services (Pearl, Brown, & Meyers, 1990). Ideally, in transition planning, parents identify what information they want, when they want it and in what format they prefer it (Robinson, 1991). This more individualized approach contrasts with standard discharge protocols still used in most NICU's in which demonstrations of routine care, such as bathing, feeding, medication administration and temperature taking, for example, are provided by the nursing staff, often no more than one or two days prior to discharge (Cagan & Meier, 1983). These standard demonstrations typically do not involve other disciplines or the parents in determining what the parents perceive they need.

METHODS

The goal of this project was addressed in the development, implementation, and evaluation of three studies. The first study was designed to identify what families are experiencing during their child's hospitalization, how important each of these factors is, the parents' level of satisfaction with the information received, and, what families are experiencing post discharge in terms of support and services accessed.

Based on the data collected in the first study, a Transition Planner Needs Assessment (TPNA) was developed. The second study was designed to evaluate the use of the Transition Planner Needs Assessment compared to routine discharge planning.

The third study was designed to field test the revised transition planner, renamed the NICU Individualized Transition Planner.

STUDY 1: Retrospective Transition Interview with Parents of Infants Discharged from the NICU

The goals of this study were: (1) to identify experiences in the NICU that mothers perceived as supportive or important to them; (2) to identify common information needs that mothers have prior to, or following, discharge which could be met through transition planning; (3) to determine the extent to which such information needs vary across mothers; (4) to determine the extent to which recollection of information needs varies across time; and (5) to develop recommendations for enhancing future transition planning.

Methods

Subjects. Forty-five mothers of infants receiving care in a large metropolitian teaching NICU agreed to participate in a follow-up study focusing on the transition from the NICU to home. Mothers were contacted for participation if they were over 14 years old, lived within a 100-mile radius, planned to remain in the area for the next 12 months, and agreed to participate in two interviews. Criteria for participation also included that the infant was either the product of a single birth or a single surviving twin, and had been hospitalized in the NICU at least one week for respiratory illness. Mothers whose infants were being placed in foster or adoptive families or were undergoing major surgery such as heart and intestinal surgery, repair of an anomaly, or who had myelomeningocele, and Grade III or IV intraventricular hemorrhage were excluded.

Thirty-six of the original 45 subjects who were interviewed at one month were available for an interview at seven months. Reasons for the 20% attrition rate were: unable to locate (5), parent chose not to participate (3), and infant had died (1).

Setting. At one-month post discharge, 58% (n=21) of the interviews were done in the home and 42% (n=15) were done over the telephone. At 7-months post discharge, 50% were done over the telephone.

Instrument. The Retrospective Transition Interview (RTI), a 23-page interview, was developed to assess parents' experiences with the transition process. Information for this form was gathered from: (a) interviews with families who had a child in the NICU previously, (b) information from "The Premature Baby Book" (Harrison & Kositsky, 1983); and (c) clinical experience of the principal investigator with families and health care providers associated with the NICU.

Information on the RTI was divided among three sections. "Section I: Your Experiences While Your Baby was in the NICU" included questions regarding parents' involvement with their infant's care during hospitalization, the role of family and friends, and support services. Mothers were asked to respond to 14 items (e.g., "My baby's medical condition was explained to me") by indicating "yes", "no", or "not applicable". If it was applicable, they then were asked to rate on a 5-point scale how important the item was to them, whether they had experienced it or not. If the experience had occurred, they were asked to rate how satisfied they were with the experience using a 5-point scale. The last part of the section requested that mothers identify individuals who assisted them during their infant's hospitalization (e.g., nurse, family members) and the ways in which they provided assistance (e.g., transportation, meals).

"Section II: Taking Your Baby Home from the Hospital" was divided into two parts. In "Part A: Taking Care of Basics", mothers were asked to indicate whether information about basic care and special care of the infant (e.g., how to give my baby CPR) was provided and, again, to rate on a 5-point scale how important and how helpful the information was to them. Information about the discharge process, for example, when it began, who was involved, and where it occurred, was gathered in "Part B: Discharge Experiences".

"Section III: Your Experiences Since You've Been Home" included questions about assistance available, services being used and coordination of services.

To reduce the length of the interview time, the four was revised to delete a number of items in the second administration. Copies of each version of the RTI are available upon request from the author.

Procedure. Mothers of infants in the NICU, who fit the criteria for inclusion, were contacted either during a visit to the NICU or by telephone by the project research coordinator to request their participation. Once a mother agreed to participate and an interview date was established, an information packet was mailed to the family containing an additional consent form for audiotaping, an overview of the project, an example of the 5-point Likert scale, and an evaluation form.

Interviews were conducted by two women graduate students enrolled in a counseling psychology program. A written protocol was followed in the administration of the RTI.

Interrater Reliability. Eight interviews were checked for reliability at one month, and another eight were checked at seven months. Reliability assessments were distributed evenly across the two interviews. Interview reliability by subject equaled 99% at one month and 93% at seven months. The overall reliability equaled 98.7%.

Data Coding Reliability. A second reliability assessment was conducted to ensure that interview responses were coded and transferred accurately from the interview forms to the data summary sheets. The overall reliability equalled 98.9%.

Data Analysis. Descriptive statistics including means, standard deviations, and range of scores were obtained on each of the RTI items. Chi-square analyses were conducted on items in Sections I and II to determine the stability of scores from Time I (one months) to Time II (seven months). In addition, a content analysis was conducted on open ended questions regarding the ways in which families received support and their sources of support.

RESULTS

A comparison of the findings at one- and seven-months indicated that mothers' responses were extremely consistent over time. Therefore, only the data from the one-month interview will be presented.

The type of information presented during discharge/transition planning varied considerably. While 100% of the mothers reported that they "could ask questions" and "felt welcome to visit", only 50% reported that they had "helped make decisions about my baby's care" and 24% reported that they had been told about "support services".

Overall, parents were extremely satisfied with the information they received and the experiences they had during their child's NICU hospitalization. On a 1-5 Likert type scale with 5 being very satisfied or helpful, 60 of the 63 items presented had a mean rating of 4.0 or higher.

Items at the top of the list of importance were those that dealt with "life-sustaining" tasks such as "operating a heart and apnea monitor", "giving baby medicine", and "contacting the NICU". Items reported by fewer than 10% of parents dealt with play and meeting other parents.

Every parent reported receiving information about discharge verbally form the staff. The second most common forms of information transmission, reported by 69% of the parents, were written materials and observation and practice.

While 30% of the parents reported that discharge planning occurred seven days or more before discharge, another 30% reported that it began only two days before discharge.

Despite the variability in the information discussed, when parents were asked to rate their level of preparedness to care for their infant at discharge, on a 1-5 scale with 1 unprepared and 5 prepared, 94% of the mothers gave this item a 4 or 5. The mean rating was 4.61. Furthermore, when asked how satisfied they were with their own involvement in their baby's care on a 1-5 scale with 1 very dissatisfied and 5 very satisfied, 97% of the mothers gave this item a 4 or 5. The mean rating was 4.81.

Thus, despite the discrepancy in information presented, mothers still felt prepared to care for their infants at home and satisfied with the level of involvement they had in the NICU.

Study #1: Outcome. Based on the results of the RTI study, it appeared that there was work on transition planning to be done in the NICU and that the RTI would be a valuable instrument for evaluating the impact of an intervention. Drawing from the information on the RTI which was rated by parents to be important (which was essentially all of it), the Transition Planner Needs Assessment (TPNA) was developed.

A primary concern in the development of the TPNA was to create a form that would be user friendly to NICU personnel as well as to families. According to Bruder and Cole (1991), numerous "exemplary practices for assisting families both in the NICU and during the transition to home" have been identified. Unfortunately, few of these practices are being implemented in the 1,150 NICUs in the country, including the sites where the practices were developed. With the goal of having a form that would continue to be utilized after this project, the TPNA was revised several times based on feedback from medical and nursing staff members.

STUDY 2: A Comparison of the Use of Transition Planning and Routine Discharge Planning in the NICU

The purpose of this study was to compare the utility of the Transition Planning Needs Assessment (TPNA) with the utility of routine discharge planning in facilitating the transition from the NICU.

The specific questions addressed in the evaluation of the transition planning intervention included the following:

1. To what extent do families receive services they request? Do families who received the TPNA access more services for their child and family than families who received routine discharge planning?

2. Are families who received the TPNA more likely to report that their child has a medical home and is receiving routine medical follow-up than families who received routine discharge planning? Do families in the treatment group report fewer health problems and concerns than families of infants in the control group report for their children?

3. Do families who received the TPNA report that their child is more advanced developmentally than infants whose families received routine discharge planning as determined by the Kent Infant Development (KID) Scale?

4. Do mothers who received the TPNA report a lower level of stress than mothers who received routine discharge planning?

5. How do families receiving the TPNA differ in their satisfaction with the discharge planning process from families who received routine discharge planning?

Routine Discharge Planning. Prior to the study, the NICU social worker identified the following areas of information that she would generally discuss with families during routine discharge planning:

- financial assistance
- nutrition assistance
- transportation
- support available
- employment history
- extent of prenatal care
- utilities (occasionally)
- child's medical condition
- role of primary nurse

Routine discharge planning in this NICU was reported to include: teaching parents how to work any equipment their child may need at home, assisting them in securing insurance coverage, recommending medical follow-up, coordinating home assistance, and developing linkages with other services which may be requested for the child or family. Information provided was determined based on the needs of the family. Consequently, every family did not receive the same type of information or even the same opportunity to get information.

METHOD

Subjects. Every child entering the NICU who fit the criteria for selection (see Study #1) was a potential subject for this study. Forty-nine families were enrolled in the Transition Study. Twenty-five received the TPNA and 24 received Routine Discharge Planning. Of the 49 recruited subjects, 30 participated in the four-month post-discharge follow-up. Subjects did not complete the study for the following reasons: unable to contact (n=10); infant death (n=3); foster care, adoption, declined participation, social worker did not interview, still in another hospital at follow-up, and unsuccessful interview attempts (n=1 each).

Procedure. Families agreeing to participate in the study were randomly assigned to the TPNA or the routine discharge planning group. All children received routine discharge planning from the NICU social worker. Those families assigned to the experimental group received the administration of the TPNA which included routine discharge planning by the social worker. While an attempt initially was made to administer the TPNA on more than one occasion, it became clear during the pilot phase that only one administration was feasible during the course of this study.

Families requesting additional information as a result of completing the TPNA were provided that information from the appropriate source. For example, the social worker, nurse, physician or community health worker was contacted for assistance, as needed.

Printed information was assembled on each item listed on the TPNA. This information was in the form of brochures, selected passages from books, and articles. Parents were given a folder with a Summary of Requested Information and the material they requested. To encourage the parent to take an active role, both written and verbal prompts were given regarding the type of information they could seek and from whom they could seek it. For example, families were encouraged to seek information from the nursing staff regarding care of their child in the unit as their child's medical status improved.

Three months post-discharge form the NICU, parents were requested to participate in a four-month follow-up. Approximately 4-months post discharge, 30 families completed a post-discharge interview. Prior to that interview, parents were sent a package that included information about the interview, as well as assessment instruments to complete (e.g., Kent Infant Development Scale, Parenting Stress Index, Likert scale for RTI items, and questions regarding services child and family utilized). Parents were interviewed by research assistants in the home (57%), at the Medical Center (13%), or over the telephone (30%) with the revised, shortened version of the RTI.

Instruments

TPNA. The Transition Planning Needs Assessment (TPNA) is a 3-page interview form designed to identify informational needs pre-discharge.

- Baby's Basic Needs (e.g., supplies, daily care, financial assistance)
- Baby's Medical Needs (e.g., temperature, immunizations, choosing a physician)
- Emotional Needs (e.g., caring for baby in the NICU, feelings about taking baby home, encouraging baby's growth)
- Support for Parents (e.g., support groups, parent/infant programs, early intervention services)

The form was developed to address the issues identified by the parents in the retrospective transition interviews. Thus, by listing each of the items, it was anticipated that the social worker could ask families if they wanted information in a particular area, and in what format they would like to receive the information (e.g., verbal, observation/practice, written). The end product would then be a document indicating the information discussed and the topics on which families requested more information.

RTI. A revised version of the RTI (for more information, see Study #1) was used to determine families' experiences in the NICU, their satisfaction with the information they received, and services they received since discharge.

A Child's Health Care Status Questionnaire. A questionnaire was developed to tap information about the child's health since discharge, frequency of medical contact, and immunizations.

KID Scale. The KID Scale (Katoff, Reuter, & Dunn, 1978) consists of 252-sentence stems which elicit information about a child's cognitive, motor, language, social, and self-help skills. From this questionnaire completed by the child's caregiver, an overall perceived developmental level can be computed, as well as a developmental level in each of the areas assessed.

Parenting Stress Index (PSI). The PSI is a 101-item questionnaire that taps perceptions held by the parent (about both the self and the child) that contribute to the level of stress experienced. This form identifies "chronic, stable and enduring components of the parent-child system that are stresses associated with dysfunctional parenting" (Abidin & Wilfong, 1989).

Transition Planning Evaluation Form. Parents in each of the groups were asked to complete the Transition Planning Evaluation Form. This is a simple, one-page questionnaire that can be completed either by the individual or by an investigator speaking with the family over the telephone. The purpose of the questionnaire was to assess the parents' level of satisfaction with the process of planning they experienced prior to discharge from the NICU.

Reliability. To ensure no diffusion of treatment effects, both the Routine Discharge Planning and TPNA administration were audiotaped in 58% (n=14) and 88% (n=22) of the interviews, respectively. Overall, this represented 74% (n=36) of the interviews.

Interrater reliability was calculated for 20% of the interviews. Assistant #1 reviewed and coded all 36 tapes utilizing the TPNA/Routine Discharge Planning Tape Review Procedures. Out of the 36 available tapes, a random selection process without replacement was utilized. Once a random 20% of the tapes had been drawn, Assistant #2 reviewed and coded them utilizing the same procedures list. The overall reliability was 92.16%.

Validity. To determine what percentage of the TPNA was already covered in routine discharge planning, Assistant #1 listened to each taped routine discharge planning interview and coded it. Based on 14 audiotapes of routine discharge planning, the amount of information covered in the TPNA that was covered anyway in routine discharge planning ranged from 3% to 31% and averaged 19%.

The percentage of items on the TPNA that the social worker actually administered was 74%. The range was 65% to 79%. Thus, despite our best efforts during the pilot (training) phase to get the social worker to go over every item on the TPNA with families, she consistently did not. When questioned about this, she indicated that she did not think it was appropriate to ask parents about services for children with special needs, for example, when at this early point in their child's hospitalization they didn't know whether this would even be a concern. Consequently, although it is desirable to give families the option of receiving every type of information thought to be important to them, it may not be appropriate clinically until a later time.

RESULTS

Information requested. Mothers most frequently requested information about the effects of prematurity and illness on development. Information not requested by parents dealt with arranging for daycare, vision screening, and accessing social, health, education, or early intervention services. Given the fact that the social worker generally did not bring up these topics, this was not surprising. Interestingly enough, from the audiotapes it did not appear that families ever requested information that was not mentioned by the social worker.

Fisher's Exact Tests were performed to compare Transition Planner and routine discharge planning families on a number of demographic variables. While none of these differences was statistically significant, possibly due to the small sample size, there appears to be a difference in maternal education level between the two groups with the Transition Planner group consisting of a higher percentage of high school graduates. However, because we did not find statistically significant differences between the two groups on the dependent measures, it is unlikely that maternal education had a confounding influence on our results.

To compare the Transition Planner group to the routine discharge group, a series of t-tests on interview and questionnaire responses were performed. Overall, there were no significant differences between the Transition Planner and routine discharge groups. Mothers, however, in the TPNA group reported that they received more information and that they were more likely to get what they requested than mothers in the routine discharge planning group.

DISCUSSION

Although not significantly different, it does appear that families in the TPNA group did get more information; yet, it did not appear to help them feel any more prepared upon discharge from the NICU. While it is easy to assume that the TPNA is not very effective, one also has to contemplate the fact that routine discharge planning, may, in fact, be as much as people need at the time. While only 36% of the families reported that they discussed ways in which to get in touch with other parents, and only 52% reported receiving information about developmental milestones, perhaps these are not the most critical factors in a parent's evaluation of preparedness.

Three factors influenced the next direction of this project:

- The social worker had endorsed the instrument for its ability to help structure and organize information;
- We believed that families should be given options for the type, timing, and mode of information delivered; and,
- We wondered if the lack of frame of reference for parents, (i.e., another situation to which they could compare this one) might be impacting their evaluations of their NICU experience.

STUDY 3: The Role of Individualized Transition Planning in a NICU

The purpose of this study was to compare the effectiveness to the NICU Individualized Transition Planner and routine discharge planning in preparing families for their child's discharge from the NICU and transition to home. Specifically, this study asked,

1. Do parents who participated in the NICU Individualized Transition Planner process report that they are more informed, better prepared, more comfortable and more satisfied with

the discharge process than those parents who received the routine discharge planning process?

2. Do parents who participated in the NICU Individualized Transition Planner process report a greater level of "family-centeredness" in the discharge process than families who participated in the routine discharge planning process?

3. Do parents who participated in the NICU Individualized Transition Planner process report they received more information about early education services, P.L. 99-457, case management, etc. than those parents who received the routine discharge planning process?

METHODS

Subjects. Seventeen mothers of infants in the NICU at a metropolitan area private hospital were recruited for participation. Criteria for inclusion were the same as those listed in Study #1. Subjects were characterized by group and are listed in Table 1.

Procedure. Mothers agreeing to participate were randomly assigned to either the routine discharge planning group (control group) or the NICU Individualized Transition Planner (experimental group). All mothers received routine discharge planning from the NICU staff. Mothers in the NICU Individualized Transition Planner (experimental group) received more personalized planning with the use of the NICU Individualized Transition Planner instrument administered by a clinical nurse specialist.

The NICU Individualized Transition Planner was administered by a clinical nurse specialist who has been oriented to the principles of family-centered care, the goals and objectives of P.L. 99-457, and to parent perceptions as reported in the retrospective transition interviews obtained in the 2 previously conducted studies.

The NICU Individualized Transition Planner was administered once a child's medical condition had stabilized. It was constructed in such a way that it can be revised and expanded depending on the length of hospitalization and the number of times that the clinical nurse specialist meets with the family. Optimally, it will be utilized on a regular basis throughout the child's hospitalization.

Prior to the child's discharge, the parent was given a copy of the NICU Individualized Transition Planner to add to the folder received earlier that has brochures and materials for the family's perusal.

Approximately 3 days after the child's discharge from the NICU, the clinical nurse specialist conducted a follow-up phone call in which she talked with the mother about the baby and reviewed the NICU Individualized Transition Planner to see if there was additional information or support that the mother might need.

Approximately 4 weeks post discharge, a clinical psychology graduate research assistant blind to the participant's group status, interviewed the mother over the telephone to evaluate the discharge/transition planning process.

Instruments. The NICU Individualized Transition Planner (a revised version of the TPNA) includes all of the items on the TPNA (Baby's basic needs, Baby's medical needs, Family's emotional needs, and Support for family) plus a new section Financial needs. This section includes locating financial assistance, eligibility requirements, and procedures.

Additional items were included in the revised copy to reflect the P.L. 99-457 IFSP guidelines. Specifically, these include:

- name of case manager
- child's present level of development
- family's strengths and needs
- major outcomes expected
- early intervention services
- outside agency service coordinators under Part H
- family agreement

For each of the items in each of these sections, the clinical nurse specialist puts a check mark if the family reports that they need it and if it is done pre-discharge or post-discharge. After reviewing each of these areas, the family and clinical nurse specialist note the strengths and needs for the family.

Intensive Care nursery (ICN) Evaluation Survey. An 11-page evaluation form was developed to evaluate the effectiveness of the ITP. Specifically, it was designed to determine:

- if the major components were covered with families
- when discharge/transition planning began
- if a case manager was identified
- if the 8 components of Family-Centered Care were incorporated
- how prepared/satisfied/informed families felt
- level of consumer satisfaction

Data Analysis. Descriptive statistics including means and standard deviations were obtained on the 23 items on the ICN Evaluation Survey designed to identify level of preparedness, satisfaction, and comfort, "family-centeredness", and information. Fisher's Exact Tests were performed to compare the NICU Individualized Transition Planner families and routine discharge planning families on each of these items.

RESULTS

Level of Preparation, Satisfaction, and comfort. Although none of the items in this grouping were significantly different, reports of preparation, satisfaction and comfort were higher in the NICU Individualized Transition Planner group than in the routine discharge planning group. Results of the ICN Evaluation Survey are reported in Table 2.

Level of "Family-Centeredness". Parents reported feeling significantly more involved in the discharge planning process in the NICU Transition Planner group than parents in the routine discharge planning group. Although not significantly different, scores for items dealing with recognition of the family's needs and strengths and acceptance of the family as important in this process were consistently higher in the NICU Individualized Transition Planner group than in the routine discharge planning group.

Level of Information. Parents in the NICU Individualized Transition Planner group reported that they received more complete information and more information about special services than parents in the routine discharge planning group. While only 2 of the 9 items in this grouping were significantly different, parents in the NICU Individualized Transition Planner group rated 8 of 9 items higher than parents in the routine discharge planning group. The experimental group was more likely to report that they received information about finances, growth and development, their child's current level of functioning, developmental outcomes, and family services.

DISCUSSION

Despite the small sample size, these data suggest that the NICU Individualized Transition Planner can effectively serve as a tool to involve parents in the NICU discharge planning process and to ensure that parents receive the information they request, as well, as information about P.L. 99-457 services which they might need at a later time.

Several factors inherent in the instrument and the process are thought to have contributed to the success of this study. While the previous instrument, the Transition Planner Needs Assessment (TPNA), used in Study 2 included many of the same items, it did not capture the strengths of the family nor did it elicit a summary of strengths and needs. It is suspected that inclusion of the family's strengths enabled the NICU nurse clinician to more accurately assess what the family needed and in what way it could best be obtained. Hence, a family could then feel and be more involved as the nurse clinician individualized the care and information for each family.

In addition to changes in the instrument, two aspects of the process are thought to have been significant to the success obtained. The first was the inclusion of the NICU nurse clinician. By utilizing a NICU nurse clinician who was extremely familiar with the medical, nursing, and developmental needs of each child, a family was able to have their questions in these areas answered in a timely manner. Based on our first study, questions about the child's medical and nursing needs, in particular, are thought to be of the highest priority for a family during the period of hospitalization. While knowledge of social services in the community or how to play with their baby, for example, are of great importance, those are not the most pressing questions. Thus, by using a nurse clinician, the family can directly ask those questions of greatest concern and, at the same time, further develop a relationship with a member of the health team who is directly involved with their child's care during hospitalization.

The second process issue related to the use of the NICU Individualized Transition Planner over multiple times. Because the relevance of issues will vary for each family, the nurse clinician was able to allow parents to identify which issues were most pressing and in what order, format and time they desired to discuss them. This factor could directly relate to a family's feeling of having more control over the information received and hence, feeling of being more involved in the process.

Despite the lack of significant differences on items related to comfort, preparedness and satisfaction, it appears that there is a positive trend toward families in the experimental group rating these items higher than families in the control group. Thus, in a larger sample, it is suspected that differences between groups would be reported. Future research will be necessary to confirm this hypothesis.

While it is uncertain why families in the experimental group did not report greater feelings of family-centered care than families in the control group, it is thought to be related to the philosophy of the unit. The NICU in which this study was conducted holds the principles of family-centered care as outlined by the Association for the Care of Children's Health as their standard of care for the unit. Thus, all families in this unit are treated considerately, regarded as important in the care and life of their child, encouraged to involve others, and encouraged to express their feelings.

One item that did not differ was parents' report that the discharge planning process was "individualized". Comments made during this study and in the earlier studies suggest that parents don't separate the discharge process from the general issues of care for their child during hospitalization. Thus, while the hospital staff may view discharge planning as a distinctly separate service, families don't. It may be, also, that the wording of this question did not adequately capture what the investigators wanted to know. Or, it could mean that whether parents in the NICU Individualized Transition Planner group see the discharge planning process as a separate service or as part of the NICU care, in general, they still didn't view the process as being individualized, despite the efforts of the nurse clinician. Clearly, this is an issue which needs to be examined more closely in future research and in discussions with families.

Finally, parents in the NICU Individualized Transition Planner group did generally report receiving more information than parents in the routine discharge planning group. Again, it is suspected that with a larger sample size, these differences would be significantly different. Future research with this instrument is necessary to confirm this hypothesis.

IMPACT

Project 1.2 has:

1. Identified issues significant to families with a child in the NICU;
2. Developed an instrument to assist families in the discharge planning process;
3. Developed an instrument that can be used to assess the needs for staff training related to preparing families for discharge;
4. Developed an evaluation instrument to evaluate parents satisfaction, preparedness, and comfort, level of information received, and feelings of family-centeredness related to their experience with the NICU;
5. Developed a manual to accompany the use of the NICU Individualized Transition Planner to be used by parents and health care providers in the NICU; and,

6. Developed a parent brochure to inform parents of the process and the use of the NICU Individualized Transition Planner.

Based on comments by parents (see Vignettes, A Manual for Using the NICU Individualized Transition Planner: A Structured process to facilitate the transition from NICU to home), the data obtained in these three studies, and from the reports of the social worker and NICU nurse clinicians who used these forms, it is thought that these materials will enhance the discharge planning process for families, health care providers, early interventionists, and community agencies.

RECOMMENDATIONS

1. Replicate Study 3 with a larger sample;
2. Develop training packages for health care providers (e.g., nurses, medical social workers, psychologists) based on the findings of these studies utilizing the instruments and accompanying materials;
3. Continue to refine the NICU Individualized Transition Planner based on parent and professional feedback obtained in research and clinical service; and,
4. Train NICU nurses to implement the NICU Individualized Transition Planner.

REFERENCES

Abidin, R., & Wilfong, E. (1989). Parenting stress and its relationship to child health care. Children's Health Care, 18(2), 114-116.

Affleck, G., Tennen, H., & Gershman, K. (1985). Cognitive adaptations to high-risk infants: The search for mastery, meaning, and protection from future harm. American Journal on Mental Deficiency, 89(6), 653-656.

Affleck, G., Tennen, H., Rowe, J., & Higgins, P. (1990). Mothers' remembrances of newborn intensive care: A pediatric study. Journal of Pediatric Psychology, 15, 67-81.

Arenson, J. (1988). Discharge teaching in the NICU: The changing needs of NICU graduates and their families. Neonatal Network, 6(29,30), 47-52.

Baker, K. Kuhlmann, T., & Magliaro, B.L. (1989). Homeward bound: Discharge teaching for parents of newborns with special needs. Nursing Clinics of North America, 24(3), 655-664.

Bernbaum, J., & Hoffman-Williamson, M. (1986). Following the NICU graduate. Contemporary Pediatrics, 3, 22-37.

Bruder, M., & Walker, L. (1990). Discharge planning: hospital to home transitions for infants. Topics in Early Childhood Special Education, 9(4), 26-42.

Bruder, M.B., & Cole, M. (1991). Critical elements of transition from NICU to home and follow-up. Children's Health Care, 20, 40-49.

Bull, M., & Lawrence, D. (1985). Mothers' use of knowledge during the first postpartum weeks. Journal of Obstetrical, Gynecological, and Neonatal Nursing, 315-320.

Cagan, J., & Meier, P. (1983). Evaluation for a discharge planning tool for use with families of high risk infants. Journal of Obstetrical, Gynecological, and Neonatal Nursing, 12(44), 275-281.

Chandler, L.K., Fowler, S.A., & Lubeck, R.C. (1986). Assessing family needs: the first step in providing family-focused intervention. Diagnostique, 11, 233-245.

Crnic, K.A., Greenberg, M.T., Ragozin, A.S., Robinson, N.M., & Basham, R.B. (1983). Effects of stress and social support on mothers and premature and full-term infants. Child Development, 54, 209-217.

Darling, R.B. (1983). The birth defective child and the crisis of parenthood: Redefining the situation. In E.J. Callahan & K.A. McCluskey (Eds.), Life-span developmental psychology: Nonnormative life events (pp. 115-147). New York: Academic Press.

Easterbrooks, M.A. (1988). Effect of infant risk status on the transition to parenthood. In G.Y. Michaels & W.A. Goldberg (Eds.), The transition to parenthood: Current theory and research (pp. 176-208). Cambridge: Cambridge University Press.

Fajardo, B. (1988). Brief intervention with parents in the special care nursery. Neonatal Network, 6(6), 23-30.

Field, T. (1990). Neonatal stress and coping in intensive care. Infant Mental Health Journal, 11(1), 57-65.

Flynn, L.L., & McCollum, J. (1989). Support systems: strategies and implications for hospitalized newborns and families. Journal of Early Intervention, 13(2), 173-182.

Fowler, S.A., Hains, A.H., & Rosenkoetter, S.E. (1990). The transition between early intervention services and preschool services: Administrative and policy issues. Topics in Early Childhood Special Education, 9(4), 55-65.

Gorski, P.A. (1985, April). Behavioral and environmental care: New frontiers in neonatal nursing. Neonatal Network, 8-11.

Hanline, M.F., & Deppe, J. (1990). Discharging the premature infant: family issues and implications for intervention. Topics in Early Childhood Special Education, 9(4), 15-25.

Hansen, M., Young, D.A., & Carden, F.E. (1986). Psychological evaluation and support in the Pediatric Intensive Care Unit. Pediatric Annals, 15(1), 60-69.

Harrison, H.V., & Kositsky, A. (1983). The Premature Baby Book: A parent's guide to coping and caring in the first years. New York: St. Martins's.

Katoff, L.S., Reuter, J., & Dunn, V. (1978). The Kent Infant Development Scale (KID) Manual. Kent, OH: Kent Developmental Metrics.

Kenner, C. (1990). Caring for the NICU parent. Journal of Perinatal and Neonatal Nursing, 4(3), 78-87.

McCluskey-Fawcett, K., O'Brien, M., Robinson, P., & Asay, J.H. (1992). Early transitions for the parents of premature infants: Implications for intervention. Infant Mental Health Journal, 13(2), 147-156.

Meck, N.E., Fowler, S.A., Claflin, K., & Rasmussen, L. Evaluating the use of transition planning in the NICU. Manuscript in preparation.

Pearl, L.F., Brown, W., & Meyers, M.K.S. (1990). Transition from neonatal intensive care unit: Putting it all together in the community. Infants and Young Children, 3(1), 41-50.

Robinson, T.M.S. (1991). Education in the NICU: An introduction. Neonatal Network, 10(1), 81.

VandenBerg, K.A. (1985, April). Revising the traditional model: An individualized approach to developmental interventions in the intensive care nursery. Neonatal Network, 32-38.

Table 1

Descriptive Statistics for Demographic Variables by Group

		Group	
Variable		ITP (n=8)	Control (n=9)
Gestational Age	*m*	30.63	33.33
(weeks)	*sd*	(3.29)	(1.66)
Birthweight	*m*	1407.13	1854.44
(grams)	*sd*	(614.73	(178.61)
Days in NICU	*m*	52.50	26.67
	sd	(35.10)	(6.52)
Mother's Age	*m*	27.63	28.78
	sd	(6.74)	(6.08)
Mother's Education	*m*	14.25	14.67
	sd	(1.98)	(1.94)
Father's Age	*m*	29.88	33.44
(years)	*sd*	(7.99)	(6.35)
Father's Education	*m*	14.38	13.89
(years)	*sd*	(2.77)	(1.96)
Family Income	*m*	31000	65000
	sd	(18000)	(36000)
		(n=7)	(n=7)
Race (percent white)	%	100	100
Infant Sex (percent female)	%	38	67
Marital Status - % Married	%	100	88
Parity (percent primiparous)	%	89	88

Table 2

Means and F-Ratio of Evaluation Items by Group

Variable	Group		
	ITP	Control	F (1,15)
COMFORT, PREPAREDNESS, SATISFACTION			
Capable (6)	4.88 (0.35)	4.22 (1.30)	1.88
Comfortable (7)	4.88 (0.35)	4.67 (0.71)	0.57
Communicate (9)	4.88 (0.35)	4.44 (0.73)	2.31
Concerns Answered (27)	4.63 (0.74)	4.67 (0.50)	0.02
Satisfied (28)[a]	4.38 (0.74)	3.88 (1.36)	0.84
Prepared (29)	4.88 (0.35)	4.33 (0.71)	3.82
FAMILY-CENTEREDNESS			
Involved (5)	4.73 (0.46)	3.33 (1.32)	8.23*
Others involved (8)	3.75 (0.46)	4.22 (0.83)	0.67
Discourage Feelings (10)	4.50 (1.07)	5.00 (0.00)	1.99
Regarded Important (12)	5.00 (0.00)	4.11 (1.36)	3.37
Individualized (13)	2.75 (1.39)	2.78 (1.48)	0.00
Inconsiderate (14)	4.75 (0.46)	4.89 (0.33)	0.51
Family's Needs (25)	4.25 (1.16)	3.67 (1.41)	0.85
Strengths (26)	4.88 (0.35)	4.00 (1.41)	0.11
INFORMATION			
Concerns (11)	4.12 (1.13)	4.33 (0.87)	0.19
Complete Info (15)[a]	4.75 (0.46)	3.75 (0.89)	8.00*
Clear Information (16)	4.75 (0.46)	4.56 (0.73)	0.42
Growth/Development (17)	3.75 (1.28)	2.67 (1.66)	2.23
Financial (18)[b]	3.43 (1.72)	2.57 (1.81)	0.82
Functioning (19)	4.00 (0.93)	3.56 (1.33)	0.62
Outcomes (20)	4.00 (1.07)	3.56 (1.81)	0.37
Special Services (21)[c]	4.14 (1.22)	2.00 (1.85)	6.78*
Family Services (22)	3.88 (1.46)	2.44 (1.74)	3.33

Note. [a]df = 1.14. [b]df = 1.12. [c]df = 1.13. [d]df = 1.9. *p < .05.

PROJECT 1.3

IN-HOME INTERVENTION TO FACILITATE THE TRANSITION FROM NICU TO HOME

Kathleen McCluskey-Fawcett, Ph.D., Department of Psychology
Marion O'Brien, Ph.D., Department of Human Development

TARGETED TRANSITION PROBLEM

The overall goal of this project was to develop and evaluate an intervention strategy that will assist parents in promoting a smooth transition from Neonatal Intensive Care Unit to home for their high-risk infants.

OBJECTIVES

1.3-1 To identify the problems/stresses experienced by the child and family, associated with the transition from NICU to home from the point of view of parents and professionals.

    1.3-1a Interview families who have experienced NICU-home transition

    1.3-1b Develop and administer parent questionnaire on NICU-home transition

    1.3-1c Develop and administer professional questionnaire on NICU-home transition

1.3-2 To produce instructional videotapes about premature infant care, the NICU, and the hospital-to-home transition.

    1.3-2a Identify segments for tapes

    1.3-2b Produce segments; combine individual segments into complete tapes

1.3-3 To evaluate the effectiveness of instructional videotapes in promoting a smooth transition from the NICU to home.

    1.3-a Carry out a pre-post analysis of teaching effectiveness

    1.3-b Conduct follow-up interviews with parents

    1.3-c Survey professionals regarding their perceptions of the usefulness and effectiveness of the videotapes

1.3-4

- 1.3-4a To prepare and evaluate a procedural manual on the production of instructional videotapes for NICU medical professionals who wish to make videotapes of their hospital nursery

- 1.3-4b To prepare manuals for implementation of the videotape and materials to accompany them.

1.3-5 To investigate family adjustment during the hospital-to-home transition following the birth of a preterm infant and relate these findings to research on parental adjustment and caretaking risk in families with premature infants.

BACKGROUND

For many children with disabilities, one of the first of a series of major transitions that will be experienced is the transition from the Neonatal Intensive Care Unit (NICU) to the home. The substantial differences between these two environments can have significant impact on the parent and child when the infant is moved from the hospital to the home setting. Many parents are not adequately prepared to assist their infant in making the adjustment from the NICU to the home. Often, parents use the only infant care techniques they know, which are those appropriate for healthy full-term babies. But the infant's experiences in the NICU, which are considerably different from those of a healthy, full-term newborn during the first several weeks of life, may require parents to make additional adaptations. Thus, many of the care techniques parents use are not effective with infants who have experienced prolonged hospitalization following birth, and may exacerbate the infant's condition and lead to breakdowns in the parent-infant relationship as well as other family difficulties.

In order to facilitate the transition from hospital to home, video-taped intervention strategies were developed and evaluated specifically to acquaint parents with their infant's experience in the NICU, the effects this environment can have on the infant, and what types of parenting strategies can be used to help the infant make a rapid, healthy transition to the home environment.

The NICU presents the newly born infant with an array of potent visual and auditory stimulation. The form of stimulation that infants in the NICU experience is unpatterned and noncontingent, and is "tied mostly to the noxious stimuli attending medical procedures, and very unlike the types of stimulation full-term infants receive in their home environments" (Korner, 1987, p. 1011). NICU environments are markedly different than home environments on a number of dimensions. The diurnal rhythms normally experienced at home are non-existent because the lights needed to fully monitor the infant's condition in the NICU preclude such cycles (Linn, Horowitz, Buddin, Leake, & Fox, 1985). This lack of a light-dark cycle can lead to difficulties in establishing sleeping patterns when the infant comes home.

Furthermore, the continuous bombardment of visual and auditory stimulation typical of NICU environments (Gottfried et al., 1981; Lawson, Daum, & Turkewitz, 1977; Linn, Horowitz, & Fox, 1985) can lead to habituation of the infant's responsivity to normal levels of stimulation in the home, making the infant appear non-responsive and non-interactive. In the NICU, infant handling tends to be at a minimum, and much of the handling experienced is aversive because it involves medical procedures such as the drawing of blood (Marton, Dawson, & Minde, 1980). Handling seldom occurs at the infant's instigation, e.g., crying seldom brings a caretaker because the caretaker usually comes on schedule rather than on demand. In addition, handling and caregiving are rarely accompanied by visual or vocal stimulation; this absence of coordinated sensory experience may contribute to the low social responsiveness of premature infants and to later deficits in the integration of sensory information (Eckerman & Oehler, 1992; Gottfried et al., 1981; Linn, Horowitz, & Fox, 1987). Also, some of the social stimulation a hospitalized infant experiences is uncomfortable or overstimulating, and the infant cannot regulate or terminate these interactions (Goldberger, 1987). This, too, can lead to poor infant-parent interactions following transition into the home.

Typically, parents are welcome or able to visit the NICU, but many are able to do so for only limited periods. When their infant is ready to go home, parents may have spent only a few hours caring for their fragile baby. Nursing and ancillary staff often try to pack extensive instructions into a few hours immediately preceding discharge. As one mother of a 24-week EGA infant put it, "They tried to give us a crash course and we were overloaded." Commonly, instructions on feeding, bathing, maintaining the apnea monitor, and health precautions are presented in one extended session, at a time when most parents are at a high stress point. Extended family members such as siblings and grandparents, not to mention friends and neighbors, will usually have had no contact with the infant before the homecoming, and may react to the infant's appearance with surprise and dismay. Parents' adjustment to the fragility and "difference" of their infant may be shaken by unprepared responses of these friends and relatives on whom they may typically rely for social support. A typical response for early visitors, according to one mother of a premature infant, was to say, "I'm not going to pick up that baby."

Many problems have been documented in infants who have spent their early weeks of life in the hospital. Some of these, such as sleep disturbances, disruptions in parent-infant interaction patterns, and lack of stimulation, may be associated with the child's unusual neonatal environment (Holmes, Reich, & Pasternak, 1984; Klaus & Kennell, 1982; Korner, 1987). These initial difficulties are probably compounded by the special needs and developmental level of a high-risk infant. Many long-term problems have also been associated with early hospitalization, including academic difficulties (Barsky & Siegel, 1992), reading problems (Goldberger, 1987), learning disabilities, sensory deficits, attentional deficits, attentional deficits, hyperactivity and behavior problems (Korner, 1987).

In order to facilitate optimal transition from the NICU to the home, and to ameliorate some of the effects of prolonged hospitalization, it is critical that parents and caregivers be given the knowledge and skills necessary to adapt their own behavior to meet the challenges of their child, and to help their child accommodate to the new environment. A smooth transition at this crucial juncture should facilitate parent-infant interaction (Eckerman & Oehler, 1992) and the subsequent attachment process (Klaus & Kennell, 1982) and increase the infant's developmental potential.

Very few studies have been attempted in the area of NICU to home transitions. Programs that have been particularly successful have two general characteristics: (a) intervention directly with parents, giving the parents the skills necessary for providing appropriate caregiving and stimulation for the infant (Holmes et al., 1984; Parker, Zahr, Cole, & Brecht, 1992; White-Traut & Nelson, 1988), and (b) education of the parent about the child's special requirements before leaving the hospital and provision of ongoing support and instruction once the child is in the home (Korner, 1987; Pfander & Bradley-Johnson, 1990; Resnick, Eyler, Nelson, Eitzman, & Bucciarelli, 1987). In the past, such programs have been appropriate primarily for families that have ready access to ongoing services and support. Unfortunately, in many areas, families are geographically or economically isolated from such services. The purpose of this project was to develop and field test informational videotapes that would facilitate the transition to home for infants with prolonged neonatal hospitalization.

RESEARCH STUDIES

STUDY 1: Identification of problems/stresses associated with the transition from hospital to home for parents of premature infants

METHODS

In order to explore the experiences of parents of premature infants, an in-depth interview study was conducted. A small but heterogeneous sample of mothers of premature infants was recruited. An unstructured interview format was used in order to permit the mothers to describe the events that were salient to them during each of these periods. The purpose of the interviews was to obtain narratives that would allow a sense of the commonalities and diversity that exist in the experiences of mothers of premature infants. The unstructured format allowed the mothers to talk about the experiences that were most important to them and to describe events in as much detail as they wished.

Thirteen mothers who had given birth to premature infants were interviewed. Their experiences occurred in four different NICUs, one pediatric ICU, and one regular newborn nursery. The mothers ranged in age from 16 to 37 at the time of their infants' birth. The families' socioeconomic status ranged from poverty level to upper middle class. Ten of the mothers were married at the time of the infant's birth. The babies' birthweights ranged from 825g to 3,000g (M = 1,887), and their estimated gestational age ranged from 26 to 35 weeks (M = 32 weeks). Length of hospitalization ranged from 7 to 96 days (M = 27 days). Nine of the infants were boys; 4 were girls.

At the time of the interviews, all the babies were over a year old, healthy, and developing within normal ranges. Mothers were interviewed at least a year after the birth of their infants in order to provide some temporal distance from the events themselves. This distance was thought to maximize the likelihood that the reporting of events surrounding the birth would be more complete and balanced than with parents still experiencing crisis and adjustment who might have more salient memories for quite recent events, and less for earlier events.

Each interview was conducted in the mother's home by one of two female interviewers. One interviewer was a graduate student in clinical psychology with considerable interviewing experience and the second a graduate student in developmental psychology who had previously worked as an occupational therapist in an NICU. Interviews were audiotaped and later transcribed verbatim.

OUTCOMES

Parents reported three aspects of the premature birth experience to create difficulties for them: labor and delivery, postpartum hospitalization, and the transition home.

Labor and delivery

The onset of premature labor is reported as a crisis event surrounded by fear and anxiety for the infant's well-being. Medical staff often tried to prepare parents for the possibility of poor outcome by providing warnings just before delivery. Parents perceived these warnings as unsupportive and discouraging. When medical professionals intervened in positive ways, parents were very grateful.

Parents' reports suggest that medical staff working with parents of high-risk infants should receive training in helping parents cope with the stress of the premature birth experience. Such training would include techniques for providing information about the labor and impending delivery, since few mothers who delivery prematurely have been able to attend childbirth education classes; the importance of providing emotional support and encouragement rather than warnings; and ways to involve parents with their infant in the immediate postpartum period.

Postpartum hospitalization

The period of hospitalization for the infant was perceived as the most stressful in the transition period, primarily because of anxiety regarding the infant's health status and stress arising from travel and financial demands. The quality of medical care was seen as uniformly high, but some other NICU staff were perceived as unsupportive and unaware of parental concerns. In general, parents felt they were powerless in the NICU. Only those who were highly assertive and well educated enough to talk with the NICU staff in "high-tech" terminology felt they were treated as equals. The parents interviewed indicated a clear need for interventions in the NICU that will help parents gain the information and skills needed to advocate successfully for themselves and their infants.

The transition home

Although parents looked forward to the transition home, they were also anxious about their ability to care for their high-risk infants. Parents generally reported they had not been well informed about their babies' care and had little experience in handling or providing care for their infants prior to discharge. The early days and weeks at home tended to be isolating for mothers who were afraid to take their infants outdoors or leave them in the care of someone else.

Despite the stresses involved with coming home, parents also reported relief. The period of hospitalization was typically so disruptive to normal family routine that having the infant at home was in many ways easier, psychologically, than having the baby in the hospital.

Implications for intervention

The findings from these interviews make it clear that interventions for families of premature infants have not kept pace with medical interventions for the infants themselves. Such programs should: (a) provide parents with the information and skills they need to feel competent and empowered as parents while their infants are hospitalized, and (b) address the emotional needs of families of medically at-risk infants. Seeking information is a useful coping strategy for many parents, and NICU staff should encourage and enhance parents' opportunities to learn about the NICU and become directly involved in infant care.

In addition, NICU staff too often assume that parents of a high-risk infant are experiencing grief for the loss of a "perfect child," when in fact the parents we interviewed described the same feelings of joy at their baby's birth as are experienced by parents of healthy fullterm infants. If medical staff expect parents to feel grief, and parents are actually experiencing joy, communication is likely to be difficult.

Overall, the long-term well-being of premature infants can be enhanced by the provision of family-centered intervention that recognizes the needs of parents to be directly involved in infant care as soon and as often as possible during the infant's hospitalization. Parents need to practice caregiving skills and learn to interpret their baby's needs and signals so they can provide appropriate and sensitive caregiving after their baby comes home.

A full report of this study appears in McCluskey-Fawcett, O'Brien, Robinson, & Asay (1992).

STUDY 2: NICU staff perceptions of the problems/stresses experienced by parents of premature infants

METHODS

Subjects

Nurses who were employed more than 20 hr per week in a 26-bed Level III NICU at a midwestern teaching hospital were surveyed for this study. Of the 40 nurses to whom surveys were given, 34 returned completed questionnaires. Three of these 34 participating nurses had more than 9 years of experience working in an NICU. The average amount of experience for the other 31 nurses was 2.7 years. Twenty-five of the 34 nurses held bachelor's degrees, 8 held associate's degrees, and 1 had a master's degree in nursing.

A sample of parents had been surveyed 18 months previously using a questionnaire (Meck, Fowler, Claflin, Stella, & Rasmussen, 1989) that served as the prototype for the one used in this study. Infants of the 45 mothers who responded to the earlier survey had been cared for in the same NICU approximately 18 months earlier and were discharged directly to home. The mean length of hospitalization for the sample was 37 days, and gestational ages at birth ranged from 26 to 41 weeks. A portion of the results from the parent survey conducted by Meck and others (Meck, Fowler, Claflin, & Rasmussen, 1991) were used as comparison data in the research presented here. In the time between the two surveys, discharge teaching procedures in the NICU remained the same.

Parent and staff questionnaires

The portion of the parent questionnaire (Meck et al., 1989) to be discussed consisted of 44 items about infant care and prematurity. (The parent study included additional information regarding parent emotional responses and experiences after hospital discharge; more complete information on the parent survey methods and results is presented in Meck et al., 1991.) All of the items represented topics that could possibly be included as part of discharge teaching for parents of infants in the NICU. Approximately 4 to 6 weeks after their infants' discharge from the NICU, mothers were asked to indicate whether they received information about each topic and how important they thought that topic was.

The same 44 items were presented to the NICU nurses as a written survey. For each item, staff were asked to rate how important the topic was for parents who have babies in the NICU, on a scale ranging from Very Unimportant (1) to Very Important (5); whether the topic was currently being discussed with parents while their baby was hospitalized; if it was being discussed, who among the NICU staff was responsible for instruction on the topic (i.e., nurse, physician, social worker, or other); and if the topic was not currently being discussed with parents, who or what would be the best source of the information if it were to become part of standard discharge teaching. One item concerning car seat use was dropped from this report because of wording changes that resulted in staff and parents being asked completely different questions.

OUTCOMES

Table 1 shows the mean staff and parent ratings of the importance of each item along with the percentage of nurses who reported that information on each topic was routinely discussed with parents during the period of their baby's hospitalization and the percentage of parents who remembered receiving information on the topic during their baby's hospitalization at the same NICU. Staff and parents agreed on the nature of the information that is important for parents, but disagreed substantially on whether specific information was actually provided.

Far fewer than half the parents surveyed remembered receiving information regarding signs of illness or infant growth and development, whereas NICU nurses reported giving parents such information as part of their routine discharge teaching. Because premature infants are at high risk for health problems, teaching parents to identify possible problems is particularly important.

It is likely that nurses do include discussion of many of the topics which parents report they do not remember. Parents may not always recognize the importance of topics discussed in the hospital, and therefore may not pay close attention. In addition, parents of hospitalized infants are under a great deal of stress, which affects their ability to attend to NICU staff and remember what they are taught. Thus, new and more effective methods of teaching parents and involving them in their infants' care would be useful in improving current discharge teaching practices.

Implications for intervention

Discharge teaching is an important role for NICU nursing staff, who are largely responsible for educating parents as well as providing minute-by-minute care for fragile premature infants. If NICU nurses were to receive training in parent education, their discharge teaching efforts would probably be more successful. In addition, alternative methods of providing parents with information, such as videotaped and printed educational materials that parents could take home and use as needed, would be useful in insuring that all parents receive the information they need to provide optimal care for their premature infants.

A full report of this study appears in Sheikh, O'Brien, & McCluskey-Fawcett (1993).

STUDY 3: Evaluation of instructional videotapes about premature infant care, the NICU, and the hospital-to-home transition

METHOD AND OUTCOMES

Two videotapes were produced by the Newborn Transition Project of the Kansas Early Childhood Research Institute to supplement standard discharge teaching practices of NICUs. The first tape, Introduction to the NICU, was designed to give parents a video-guided tour of the NICU, introduce technology and medical terminology, describe the people on the medical staff, and generally make parents feel welcome in the NICU environment. The second tape, Caring for Your NICU Baby, describes how parents can interact with their baby in the hospital and at home and models specific caregiving practices for premature infants. Both tapes were intended for parents of all education levels, and were designed to be inexpensive so parents could take them home and view them at their convenience and as often as they wished, or show them to siblings and other extended family members. A series of evaluation studies was carried out to examine the effectiveness of the tapes as an intervention for parents.

Do the tapes effectively teach?

In order to assess if information contained in the tapes was being adequately communicated, both tapes were initially evaluated using two groups of college students. Seventy-four undergraduates (34 females, 40 males; mean age 19.6 years, SD 3.02) who were enrolled in introductory psychology served as subjects in the evaluation of An Introduction to the NICU. In order to assess learning, a 20-item quiz was developed based on material presented in the tape. Each question was worded as a statement and the subject was asked to indicate "yes", "no", or "don't know" for each item.

There were two experimental conditions. In the first condition, 37 subjects were assigned to a pre-post group in which they were given the quiz immediately before and immediately after viewing the tape. The 37 subjects in the second condition were in the post-tense only condition and viewed the tape and were given the quiz. This group was included to provide a control for possible priming effects of the quiz. Prior to viewing the tape, subjects in the pre-post condition scored an average of 5 correct answers. After viewing the tape, the average score was 16, $t(35)=18.83$, $p<.001$. The post-only group averaged 15 correct, indicating no difference between the groups, $t(36)=0.75$, ns.

Taking Care of Your Premature Baby was evaluated in a similar fashion with a second quiz based on the content of the tape. Fifty-six students enrolled in a child development class took the quiz just prior to and immediately after viewing the second tape. The mean pre-test score was 11 (based on 20 items); the mean post-test score was 18, $t(54) + 23.53$, $p<.001$. It appears from these data that both tapes are effective in communicating information about prematurity and practices in the NICU.

Do professionals consider the tapes useful?

To determine whether professionals working with parents of premature infants considered the tapes useful and would therefore be interested in adopting them for use, we carried out several surveys.

Excerpts chosen to illustrate the main points of both tapes were shown to groups of professionals at one regional and two national meetings and one in-service training conference. The sample consisted of 30 professionals primarily in the areas of nursing, physical and occupational therapy, social work, special education, and early childhood education. These individuals viewed the videotapes in groups and were given a four item survey to complete. A summary of the survey results is presented in Table 2.

As is clear from the summary, in general the professionals who viewed these tapes found them to be excellent, and indicated many possible uses for them in the NICU setting. Eighty-six percent of those surveyed thought the mothers should be given the tapes within two days after the birth; 77% thought parents should be lent the tapes to take home. Other uses were also identified by at least half of the professionals. Only 40% suggested using these prior to a premature delivery. The majority of the sample rated the tapes as effective on a number of dimensions, including parental knowledge and interactions with the baby and the staff. Seventy-three percent of those who responded to the questions on site-specific versus general tapes indicated that the specific tape would be more useful. Overall, the results of this survey indicate high satisfaction with the content and potential usefulness of the two tapes.

Will parents of premature infants use and learn from the tapes?

The NICU videotapes were given to a small sample of mothers of premature infants who were in a Level III NICU to determine the usefulness of the tapes for the target population for which they were designed. Mothers were considered for inclusion in this study if they met the following criteria: infant gestational age of $\leq$ 34 weeks, birthweight of $\leq$ 2300g, no serious congenital anomalies, maternal age of $\geq$ 18 years. Mothers were approached to participate in the study as soon as possible after their infant's admission to the NICU.

Thirty-two mothers were asked to participate. Eleven mothers declined participation; eight did not state their reason for declining, one lived out of state, one mother did not want her responses recorded, and one did not feel she needed videotapes. Seven of the 21 mothers who agreed to participate did not complete all phases of the study: one moved, one baby died, one baby transferred to another hospital, one mother who was staying at a location without a television set never looked at the videotapes, and three did not state reasons for not completing the study. Data reported here are based on the fourteen mothers with complete data. The mothers who participated had significantly younger babies ($t(28)=-3.70$, $p=.001$), babies with significantly lower birthweights ($t(26)=-2.79$, $p=.01$), and significantly more female babies ($X^2=9.61$, $p=.002$) than those who declined. There were no significant differences between those who completed and those who did not complete the study.

Mothers were informed that the purpose of the study was to learn more about parents' experiences during their babies' hospitalization and first few weeks at home, and that three interview sessions would be conducted during their baby's hospitalization plus a home visit. Informed consent was obtained for those agreeing to participate. Their baby's medical history and demographic data were collected.

Mothers completed six measures at three intervals approximately one week apart after initial enrollment while their infants were hospitalized. The six measures included how often and how long they visited the NICU, their involvement in the infant's care, concerns they had about their baby, and who had been helpful or not helpful in the NICU, feelings about the NICU, and anxiety level. Their knowledge about NICU procedures and prematurity was assessed using the 20-item quizzes developed for each tape. Additionally, mothers were asked questions relating to the number of times they watched the videotapes, who else watched the tapes, and how they found the tapes most useful. Mothers also completed a retrospective interview 4 to 6 weeks after discharge to assess their overall experience in the NICU, which has been used in previous studies to assess parental attitudes in the NICU (Meck et al., 1989).

Data obtained from the videotape evaluations given at each of the three hospital visits suggest that mothers found the Baby Care tape to be more helpful than the Introduction tape. One hundred percent of the mothers who received the Baby Care tape reported it to be helpful; 78.6% of the mothers found the Introduction tape helpful. Mothers found descriptions of technology to be most useful in the Introduction tape (e.g., why the isolette is used, bilirubin lights, c-pap, bradycardia, apnea) and general information given in the tape was also judged to be helpful (e.g., seeing other parents, what a neonatologist is, all the special things that happen with premature babies). In the Baby Care tape, mothers found various aspects about their baby's care to be useful, for example, how their babies will interact, differences in caring for pre-term and full-term babies, how the babies face backwards in car seats, how to take a temperature, and hair brushing.

Although mothers found the second tape to be more useful than the first, they reported the first tape would be more useful for others than the second tape (75% useful for the first; 50% for the second). Also, fewer of the mothers who received the Baby Care tape reported they learned anything for the first time; however, most mothers received the Baby Care tape after their babies had been hospitalized at least one week, which could possibly confound the results. Mothers stated others who viewed the Introduction tape, such as the baby's father, siblings, other family members and friends, found descriptions of the technology and all the special things about premature babies were most helpful, whereas they reported the second tape was most helpful in helping others sympathize with their experience of caring for a premature baby.

Results from the quantitative measures used in interviews 1-3 suggest the mothers' anxiety level decreased as a function of time, their satisfaction with the NICU increased, and the number of concerns they had about their baby's health decreased. Their performance on the information quizzes also improved over time. Mothers became significantly more involved with their baby's care, and scores on those measures above could be related to the amount of involvement they had with their babies as well as information they gained from the videotapes and from their NICU experience.

The retrospective interviews suggest that mothers who received both tapes felt more informed and had significantly fewer questions related to the care of their baby. The majority (n = 9) reported they found information presented in video form to be helpful. The same number of mothers reported they preferred information presented in video form because they could watch the video as many times as necessary and could review important information. Mothers also reported verbal information to be helpful. Overall, mothers in both groups felt similarly satisfied with their NICU experience and most (n = 10) felt "very well" prepared for the hospital-to-home transition.

STUDY 4: Family adjustment during the hospital-to-home transition after the birth of a premature infant

METHODS

To examine family adjustment during the NICU-to-home transition, mothers' emotional responses following the birth of their premature infants, their perceptions of family adjustment including the amount and adequacy of partner support, and their descriptions of the impact of the infant on the family were measured longitudinally during their infants' hospitalization and early weeks at home.

Subjects

Forty-five mothers of premature infants in two Midwestern hospitals with Level III NICUs were included in the study. Maternal inclusionary criteria were: (a) at least 18 years of age, (b) English-speaking, (c) married or having an involved partner, and (d) planning to keep the infant. Infant inclusionary criteria were: (a) singleton or surviving twin; (b) birthweight less than 2500g, and (c) less than 36 weeks gestational age at birth. Only mothers whose infants were determined by staff to require at least three weeks of hospitalization were recruited for the study. Sixty-nine mothers were approached about participation. Nine declined, citing paternal objection, being too busy, or lack of interest. Fourteen mothers agreed to participation but did not complete all packets; one baby died during the period of data collection. Mothers who completed the study were more likely to have infant girls, $t=2.30$, $p<.05$, and to have slightly lower birthweight babies, $t=2.29$, $p<.05$, than those who declined or failed to complete.

MEASURES

Demographic and medical risk variables

All parent and family demographic information was obtained by questionnaire. Medical records were used to collect information on the following infant variables: (a) birthweight, (b) estimated gestational age, (c) length of hospitalization, (d) birth order, and (e) medical complications of the infant at birth and during hospitalization.

State Anxiety Inventory (SAI)

This scale consists of 20 affective statements such as, "I feel calm", "I am regretful", and "I feel over-excited". Subjects responded to each statement on a 4-point scale ranging from "not at all" to "very much so" depending on how much the respondent's feelings concur with the statement. Total scores can range from 20 to 80.

Center for Epidemiological Studies - Depression Scale (CES-D).

This 20-item scale contains statements of thoughts and feelings that are indicative of depression. Statements such as, "I could not get 'going'", "I felt people disliked me", and "I felt sad" are included. Subjects respond to each statement on a 4-point scale ranging from "less than once a week" to "5 to 7 days a week" depending on how often they have felt this way in the past week. Total scores can range from 0 to 60.

Feetham Family Functioning Survey (FFFS).

This 22-item scale (Feetham, 1988) is designed to measure perceptions of the adequacy of family functioning in six different areas: marital, social, and professional support and leisure, rest, and work activities. Items are worded to reflect amount of time, help, satisfaction, etc., and scored on a 7-point Likert-type scale. For example, one item reads "The amount of time you spend with your partner." In the original scale, two questions are asked for each item: "How much is there now?" and "How much should there be?" For the purposes of this study, a third question was added to assess change in family functioning during the postpartum and post-discharge periods. On the pre-discharge questionnaire, the third question read, "How much has this changed since your baby was born?"; on post-discharge forms, the question read, "How much has this changed since your baby came home?"

Three scores were derived form the FFFS for each subject: a discrepancy score, a change score, and an intimate support score. A total discrepancy score was calculated by taking the absolute value of the difference between the response to how much is there? and the response to how much should there be? and summing across all items. This score measured expectancy violation, or the discrepancy between desired and actual levels of functioning.

A change score was calculated by summing the responses to how much has this changed? across all items. The change score assessed the amount of change in family functioning related to the hospitalization and homecoming of the premature infant and helped differentiate situational from pre-existing stressors.

A third score, indicating the amount of support received from the partner, was calculated by summing responses to how much is there? for the six items concerned directly with intimate support. This subscale was used because of previous research indicating the importance of support by spouse or partner during the transition to parenthood (Crnic et al., 1983, 1984; Stemp et al., 1986).

The Impact on Family Scale - General form (IFS)

The original IFS was designed to measure the effect of a child's medical condition on the family (Stein & Jessop, 1985). The general form used in this study, which omits specific reference to the child's illness, was subsequently developed by Stein and Jessop for use with or without chronically ill children. For example, the first item in the original scale states, "The illness is causing financial problems for the family"; the first item on the general scale states, "Children cause financial problems for the family." For the purposes of this study, the term "child" was changed to "baby" or "newborn baby" on a number of items in order to make it clear that the item was referring to the impact of the premature baby on the family.

The IFS general scale consists of 21 items which are scored on a scale from 1 to 4 indicating the extent to which the respondent agrees or disagrees with the statement. Fourteen of the items are used to calculate a total impact score, which can range from 14 to 56, with a high score reflecting a high level of disruption in family functioning attributed to the premature birth. Four of the remaining 7 items are combined into a coping score, with scores ranging from 4 to 16 and high scores reflecting mothers' perceptions of positive accommodation on the part of the family.

PROCEDURES

Mothers meeting inclusionary criteria were contacted once their infants were no longer in critical condition and discharge appeared to be within 2 to 4 weeks. Mothers were asked to complete a packet of questionnaires at different times: (a) approximately two weeks prior to their infant's discharge, (b) 1 to 2 weeks post-discharge, and (c) 6 to 7 weeks post-discharge.

OUTCOMES

In general, mothers of premature infants experienced significant levels of anxiety and depression. Descriptive data on maternal emotional state by time of measurement are shown in Table 3. To examine changes over time, separate repeated-measures MANOVAs were run on mothers' anxiety and depression scores. Significant effects for time of measurement were found for both variables: anxiety, $F(2, 43) = 11.22$, $p < .001$; depression, $F(2, 43) = 13.93$, $p < .001$. Post-hoc tests ($p < .01$) showed that both anxiety and depression were significantly higher during the infant's hospitalization (Time 1) than at either of the post-discharge data collection points. The rise in depression scores between Time 2 and Time 3 was only marginally significant

($p<.06$), but the mean at Time 3 (16.1) was equivalent to the cutoff used in screening for clinical depression (Myers & Weissman, 1980). During the infant's hospitalization (Time 1), mothers' depression scores were well above this cutoff, although still below means reported for clinical populations (Radloff, 1977). At all measurement points, mothers' mean anxiety levels were well above the norm of 35 for women in the 19- to 39-year age range (Spielberger et al., 1983), as indicated by t-tests comparing mothers' scores with this norm: Time 1, $t = 8.25$; Time 2, $t = 4.49$; Time 3, $t = 4.92$, all $p<.001$. Clearly, these mothers were experiencing considerable emotional distress throughout their infants' hospitalization and early weeks at home.

Spousal support appeared to play a crucial role in mothers' adjustment to premature birth. Mean scores derived from the Family Functioning Scale across the three measurement times are also shown in Table 3. A repeated measures MANOVA calculated on the *Discrepancy* and *Change* scores indicated a significant effect for time of measurement, $F = 2.56$, $p<.05$. Univariate results indicated that scores were significantly different over time only for the *discrepancy* score, $F = 3.58$, $p<.05$, and post-hoc tests ($p<.01$) showed a greater discrepancy between desired and actual functioning during hospitalization (Time 1) than at either of the later measurement points. A separate analysis including only the intimate support subscale showed a highly significant effect for time of measurement, $F(2, 88) = 10.32$, $p<.001$. Post-hoc tests ($p<.01$) showed mothers reported receiving higher levels of intimate support during hospitalization (Time 1) than after the baby's homecoming (Times 2 and 3).

The more support the mother perceived from her partner, the less discrepancy she reported between her ideal and actual situation and, to a lesser extent, the less change she associated with the infant's homecoming (see Table 4).

Zero-order correlations between the scores obtained form the *Family Functioning Survey* and the total impact and coping scales from the *Impact on Family Scale* at Time 3 are shown in Table 5. Mothers' perceptions of the discrepancy between desired and actual family functioning and the amount of change in family functioning since the baby's birth measured during hospitalization (Time 1) were not highly related to perceived negative impact of prematurity, or to the mother's feelings of being able to cope with the situation at Time 3. Once the infant was discharged, however, there was increasing correspondence across measures, indicating the importance of maternal satisfaction with partner and other support to her positive feelings about the newborn infant and her own ability to cope with the situation. The amount of partner support received by the mother was related to her perception of the impact of the child on the family at all three measurement times.

To determine whether perceptions of family functioning differed in mothers with and without depressive symptomatology, the sample was divided based on their CES-D scores at Time 3. Twenty-one of the 45 mothers reported significant depressive symptoms (CES-D score of 16 or above) six weeks after their infant's hospital discharge. A repeated measures MANOVA was then used to test for differences in the Discrepancy and Change scores derived from the FFFS between the high and low depressive symptoms groups.

As shown in Figure 1, the two groups showed significantly different patterns of adaptation to the birth and especially the homecoming of their premature infants. Mothers whose CES-D scores were high at Time 3 had higher Discrepancy and change scores on the FFFS at all three measurement points, multivariate $F = 12.36$, $p < .001$. Unlike the mothers who showed less depressive symptomatology, those with high scores on the CES-D perceived high and increasing amounts of Change in their family and social support systems related to the baby's homecoming. This pattern was reflected in a significant Time X Depression group interaction, $F(2, 42) = 4.27$, $p < .05$.

Mothers reporting depressive symptomatology also had higher scores on the Total Impact scale, $t(43) = 5.16$, $p < .001$, and lower Coping scores, $t(42) = 2.12$, $p < .05$, at Time 3. These results indicate that perceived family and social support during the hospital-to-home transition are closely tied to the maintenance of positive emotional states in mothers of premature infants.

Implications for intervention

Professionals who wish to intervene with families to enhance positive adjustment and promote a healthy environment for child development might target partner support, which appears from this and other studies to play an important role in maternal perceptions about premature birth. Further, the results of this study suggest that single mothers whose partners are not involved and who do not have supportive extended families may be particularly at risk for adjustment to parenting a premature infant (Asay, McCluskey-Fawcett, & O'Brien, 1992; O'Brien, 1992).

In addition, results of this study suggest that the timing of intervention following premature birth is likely to affect its success. The initial days and weeks at home appear to be a "honeymoon" period when stress and depression are lifted. During this time, mothers may express a positive outlook to professionals making home visits, giving an overly optimistic picture of the family's positive adjustment. The changing nature of mothers' perceptions of family functioning over time suggest that home visitors should maintain close contact with the families of premature infants over at least the first several months after hospital discharge.

IMPACT

The primary products of this project, the two instructional videotapes to facilitate a smooth transition from the NICU to home and the accompanying manuals for parents and professionals, could have a significant impact on the early care and subsequent developmental outcome of infants born preterm. The evaluation studies of these materials discussed previously in this report clearly demonstrated the usefulness of this type of low cost, easily disseminated intervention. The tapes served as effective sources of information for parents. This media is particularly effective for a number of additional reasons: literacy is not required; the information can be viewed repeatedly and over time; other significant persons can be given the information; and staff time required is minimal. The results of the evaluation study also suggest some second-order effects of the tapes: increased maternal involvement in infant care, decreased maternal anxiety and decreased health concerns. Professional staff also reported the efficacy of such an approach.

This type of intervention strategy could be incorporated into a number of settings in addition to the NICU in order to facilitate optimal early childhood outcome. The video tapes and accompanying materials could be incorporated into public health clinics, prepared child birth courses, health education in secondary schools, nursing, allied health, social welfare, psychology and education curricula at the undergraduate level, and in-service training settings for professionals in the field. Numerous and varied audiences could benefit from the materials developed during the course of this project.

In addition to instructional videotapes developed, the data from other studies conducted during the course of this project should also have an impact on the field. The study published in the Infant Mental Health Journal on intervention strategies suggested by maternal reports outlines several important factors that need to be considered in providing optimal care for infants and families during the birth, hospitalization, and transition to home for at-risk preterm infants. This particular publication outlet was selected because the readership includes practitioners in a wide variety of settings, as well as members of the research community.

For similar reasons of audience, the research on NICU staff and parents' perceptions of transition planning was published in Children's Health Care. The findings reported in that article clearly demonstrated the discrepancy between what professionals believe is being taught and what is actually being learned by parents. This information is crucial for professionals for the development of effective communications and instructional techniques for parents in their setting. New techniques for information transfer are necessary to insure that their at-risk infants receive optimal care to facilitate positive outcome.

The third major empirical finding on the short- and long-term adjustment of mothers of preterm infants has direct implications for the long-term care of such families. Although initial measures of adjustment suggested that depression and anxiety decreased following discharge, levels began to increase after the infant was home for a while. Professionals that conduct follow-up clinics or provide long-term care for at-risk families should be aware of the fact that apparent initial adaptation does not always predict long-term adjustment.

RECOMMENDATIONS

The results of this project suggest several avenues for future research and intervention. Additional work on the communication between parents and professionals is clearly indicated. Data from this project indicate that there is a high degree of discrepancy between what professional staff believe they are teaching parents and what parents are learning. Further investigation of the mechanisms that are causing this lack of information transfer and methods for alleviating it is warranted. Research and theory on the psychology of learning could help guide this work. Intervention strategies could incorporate this data in the design of effective strategies. It is clear that staff time is not being efficiently utilized when transitional instruction is not yielding the expected results.

Additional research is also needed to determine the long-term impact on the family of having an at-risk preterm child. There is a fairly substantial literature on the effects of having a child with a disability, but very little on the preterm infants. The results from this project indicate that a longitudinal approach to this work is essential. Data from only a few time points can lead to erroneous conclusions. Work on the entire family unit is also indicated. The work here focused exclusively on the mother to the exclusion of the father, siblings and other extended family members. Since the preterm child is a part of a family system and has impact on the system and is in turn effected by the system, the unit of analysis should be the entire family. Results of this work could have important implications for intervention; family-centered intervention has been shown to be an effective strategy for facilitating optimal development in at-risk children.

The intervention materials developed for this project appear to be effective in achieving the objectives of this grant. The instructional videotapes are effective in teaching a wide array of concepts important to parents of a preterm infant. This type of intervention strategy could be used in a variety of settings with a wide array of populations. Although making such a video is rather time consuming, with careful planning, detailed script development, and access to editing equipment, any professional with a camcorder could create effective materials. This type of intervention could be particularly helpful for adolescent parents, parents with limited reading ability and in settings where a great deal of information needs to be taught by a limited staff and in a limited time frame. Careful evaluation of the video-tapes would need to be done to insure their effectiveness, but the methods used for evaluation in this project could be easily adapted for any content area.

In sum, the intervention materials developed for this project and the supporting studies suggest that there is still a great deal of research that needs to be conducted with preterm infants and their families. This work also suggests some innovative ways of intervening with at-risk families.

REFERENCES

Asay, J., McCluskey-Fawcett, K., & O'Brien, M. (May, 1992). Adjustment of mothers and families with preterm infants during the hospital-to-home transition. Paper presented at the Eighth International Conference on Infant Studies, Miami Beach, FL.

Barsky, V.E., & Siegel, L.S. (1992). Predicting future cognitive academic and behavioral outcomes for very low-birthweight infants. In S.L. Friedman & M.D. Sigman (Eds.), The psychological development of low birthweight children (pp. 275-298). Norwood, NJ: Ablex Publishing Corp.

Crnic, K.A., Greenberg, M.T., Ragozin, A.S., Robinson, N.M., & Basham, R.B. (1983). Effects of stress and social support on mothers and premature and full-term infants. Child Development, 54, 209-217.

Crnic, K.A., Greenberg, M.T., Robinson, N.M., & Ragozin, A.S. (1984). Maternal stress and social support: Effects on the mother-infant relationship from birth to eighteen months. American Journal of Orthopsychiatry, 54, 224-235.

Eckerman, C.O., & Oehler, J.M. (1992). Very low birthweight newborns and parents on early social partners. In S.L. Friedman & M.D. Sigman (Eds.), The psychological development of low birthweight children (pp. 91-123). Norwood, NJ: Ablex Publishing Corp.

Fava, G.A. (1983). Assessing depressive symptoms across cultures: Italian validation of the CES-D self-rating scale. Journal of Clinical Psychology, 39, 249-251.

Feetham, S. (1988). Feetham Family Functioning Survey. Children's Hospital National Medical Center, Washington, DC 20010.

Goldberger, J. (1987). Infants on acute care hospital units: Issues in stimulation and intervention. In N. Guzenhauser (Ed.), Infant stimulation: for whom, what kind, when, and how much? (pp. 111-121). Skillman, NJ: Johnson & Johnson.

Gottfried, A.W., Wallace-Lande, P., Sherman-Brown, S., King, J., Coen, C., & Hodgman, J.E. (1981). Physical and social environment of newborn infants in special care units. Science, 214, 673-675.

Holmes, D.L., Reich, J.N., & Pasternak, J.F. (1984). The development of infants born at risk. Hillsdale, NJ: Lawrence Erlbaum, Assoc.

Klaus, M.H., & Kennell, J.H. (1982). Parent-infant bonding. St. Louis: C.V. Mosby Co.

Korner, A.F. (1987). Preventive intervention with high-risk newborns: Theoretical, conceptual, and methodological perspectives. In J.D. Osofsky (Ed.), Handbook of infant development (2nd ed.) (pp. 1006-1036). New York: Wiley & Sons.

Lawson, K., Daum, C., & Turkewitz, G. (1977). Environmental characteristics of a neonatal intensive-care unit. Child Development, 48, 1633-1639.

Linn, P.L., Horowitz, F.D., & Fox, H.A. (1985). Stimulation in the NICU: Is more necessarily better? Clinics in Perinatology, 12, 407-422.

Linn, P.L., Horowitz, F.D., Buddin, B.J., Leake, H., & Fox, H.A. (1985). An ecological description of a neonatal intensive care unit. In A.W. Gottfried & J. L. Gaiter (Eds.), Infant stress under intensive care: Environmental neonatology. Baltimore: University Park Press.

Linn, P.L., Horowitz, F.D., & Fox, H.A. (1987). Stimulation in the NICU: Is more necessarily better? Clinics in Perinatology, 12, 407-422.

Marton, P.L., Dawson, H., & Minde, K. (1980). The interaction of ward personnel with infants in the premature nursery. Infant Behavior and Development, 3, 307-313.

McCluskey-Fawcett, K., & O'Brien, M. (1991). An introduction to the NICU (KU Medical Center version). Thirteen-minute videotape produced by the Newborn Transition Project. Limited availability. Kansas Early Childhood Research Institute (KECRI), Institute for Life Span Studies, University of Kansas, Lawrence, KS, 66045. USDE/OSEP #H024U80001.

McCluskey-Fawcett, K., & O'Brien, M. (1991). Learning to care for your NICU baby. Fifteen-minute videotape produced by the Newborn Transition Project. Limited availability. Kansas Early Childhood Research Institute (KECRI), Institute for Life Span Studies, University of Kansas, Lawrence, KS, 66045. USDE/OSEP #H024U80001.

McCluskey-Fawcett, K., & O'Brien, M. (1992). An introduction to the NICU (Stormont-Vail Regional Medical Center version). Fifteen-minute videotape produced by the Newborn Transition Project. Limited availability. Kansas Early Childhood Research Institute (KECRI), Institute for Life Span Studies, University of Kansas, Lawrence, KS, 66045. USDE/OSEP #H024U80001.

McCluskey-Fawcett, K., O'Brien, M., Robinson, P., & Asay, J.H. (1992, Summer). Early transitions for the parents of premature infants: Implications for intervention. Infant Mental Health Journal, 13(2), 147-156.

Meck, N.E., Fowler, S.A., Claflin, K., Stella, M.E., & Rasmussen, L. (1989). Retrospective Transition Interview (RTI) for parents of NICU graduates manual. Kansas City: University of Kansas Medical Center.

Meck, N.E., Fowler, S.A., Claflin, K., & Rasmussen, L. (1991, November). A retrospective transition interview with parents of infants discharged from the NICU. Paper presented at the annual International Division on Early Childhood Conference, St. Louis.

Myers, J.K., & Weissman, M.M. (1980). Use of a self-report symptom scale to detect depression in an community sample. American Journal of Psychiatry, 137, 1081-1084.

O'Brien, M. (May, 1992). How terrible are the terrible twos? Paper presented at the Eighth International Conference on Infant Studies, Miami Beach, FL.

Orme, J., Reis, J., & Herz, E. (1986). Factorial and discriminant validity of the Center for Epidemiological Studies Depression (CES-D) scale. Journal of Clinical Psychology, 42, 28-33.

Parker, S.J., Zahr, L.K., Cole, J.G., & Brecht, M. (1992). Outcome after developmental intervention in the neonatal intensive care unit for mothers of preterm infants with low socioeconomic status. Journal of Pediatrics, 120, 780-785.

Pfander, S., & Bradley-Johnson, S. (1990). Effects of an intervention program and its components on NICU infants. Children's Health Care, 19, 140-146.

Radloff, L.S. (1977). The CES-D Scale: A self report depression scale for research in the general population. Applied Psychological Measurement, 1, 385-401.

Resnick, M.B., Eyler, F.D., Nelson, R.M., Eitzman, D.V., & Bucciarelli, R.L. (1987). Developmental intervention for low birthweight infants: Improved early developmental outcome. Pediatrics, 80, 68-74.

Roberts, R.E. (1980). Reliability of the CES-D Scale in different ethnic contexts. Psychiatry Research, 2, 125-134.

Sheikh, L., O'Brien, M., & McCluskey-Fawcett, K. (1993). Parent preparation for the NICU-to-home transition: Staff and parent perceptions. Children's Health Care, 22(3), 227-239.

Spielberger, C.D., Gorruch, R.L., Luchene, R., Vagg, P., & Jacobs, G.A. (1983). Manual for the State-Trait Anxiety Inventory, Palo Alto: Consulting Psychology Press.

Stein, R., & Jessop, D.J. (1985). Tables documenting the psychometric properties of a measure of the impact of chronic illness on a family. Albert Einstein College of Medicine, Bronx, NY, 10461.

Stein, R., & Riessman, C. (2980). The development of the impact-on-family scale: Preliminary findings. Medical Care, 18(4), 465-472.

Stemp, P.S., Turner, R.J., & Noh, S. (1986). Psychological distress in the postpartum period: The significance of social support. Journal of Marriage and the Family, 48, 271-277.

Weissman, M.M., Sholomskas, D., Pottenger, M., Presoff, B.A., & Locke, B.Z. (1977). Assessing depressive symptoms in five psychiatric populations: A validation study. American Journal of Epidemiology, 106, 203-214.

White-Traut, R.C., & Nelson, M.N. (1988). Maternally administered tactile, auditory, visual and vestibular stimulation: Relationship to later interactions between mothers and premature infants. Research in Nursing and Health, 11, 31-39.

Table 1

Results of staff discharge teaching survey and comparable items from the Parent Retrospective Transition Interview

	Importance		Was topic discussed?	
Questionnaire Item	Staff	Parents	Staff	Parents*
Feeding				
1. How much and how often to feed baby	4.9	4.7	100%	96%
2. What to do if baby isn't eating enough	4.9	4.3	94%	24%
3. Help if I wanted to breastfeed	4.8	3.4	97%	56%
4. What to do if baby sleeps through feedings	4.4	4.1	91%	64%
Bathing				
5. How to bathe and how often	4.3	4.4	97%	93%
6. How to keep baby's hair clean	4.1	4.1	100%	73%
Sleeping				
7. How long baby should sleep at one time	3.8	3.7	68%	20%
8. How often baby should nap	3.5	3.6	56%	14%
9. How to tell if baby is sleepy	3.1	3.3	44%	14%
10. What to do when baby won't sleep	3.9	4.0	67%	22%
Crying				
11. How much baby might cry	3.5	3.8	47%	13%
12. What to do when baby cries	4.2	4.4	88%	49%
13. What to do if baby cries too much or not enough	3.9	4.0	67%	9%
Playing				
14. How to encourage baby to interact with mom	4.3	4.2	88%	38%
15. How to tell when baby is ready to play	3.4	3.8	44%	9%
16. Tricks to keep baby involved in play	3.2	3.6	32%	2%
17. How to make or find interesting things to put in baby's crib	3.7	4.0	74%	47%
Baby's Unique Characteristics				
18. Baby's personality/temperament	4.0	4.2	85%	53%
19. How baby lets his/her needs be known	4.2	4.3	94%	59%
20. Baby's response to handling	4.1	4.4	82%	47%

---

* Parent data represent percentage of those who responded to the question; when a topic was not relevant for a particular mother and infant, it was recorded *Not Applicable*.

(Table 1 continues)

(Table 1 continues)	Importance		Was topic discussed?	
Questionnaire Item	Staff	Parents	Staff	Parents*
Monitoring Baby's Health				
21. How to recognize differences between normal breathing patterns and those that indicate illness	4.8	4.4	91%	38%
22. How to recognize the difference between spitting up and vomiting	4.4	4.4	77%	38%
23. How to recognize the difference between regular stools, diarrhea, and constipation	4.6	4.6	82%	58%
24. How to get in touch with the NICU staff	4.6	4.8	100%	100%
Taking Care of Baby's Health				
25. How to give medications	5.0	4.8	100%	100%
26. How to take baby's temperature	4.9	4.6	100%	98%
27. How to use a bulb syringe	4.9	4.4	100%	84%
28. What to do if someone living at home gets sick	3.9	4.3	42%	27%
29. How to give CPR	4.9	4.8	100%	64%
Medical Care				
30. How soon to schedule a visit with baby's primary care physician	4.8	4.8	100%	93%
31. How baby's medical records are transferred	3.3	4.1	38%	27%
32. How to get help in an emergency	4.9	4.7	94%	64%
33. How to pay for the hospital stay	3.8	4.1	71%	42%
Learning More About Prematurity				
34. How to get in touch with other parents of preemies	3.4	3.6	47%	5%
35. Books or pamphlets about prematurity	4.1	4.5	97%	46%
36. Where to get preemie diapers and clothing	3.6	3.9	82%	47%
37. Awareness of normal and delayed growth and development	4.2	4.5	67%	38%
38. Suggestions on ways to encourage baby's growth and development	4.1	4.4	68%	22%
39. When to schedule baby for developmental follow-up	4.2	4.6	85%	73%
With Family And Friends				
40. Who should hold and handle baby	3.4	3.5	68%	33%
41. How relatives and friends might react to the baby	3.3	3.3	32%	7%
42. Whether it is okay to leave the baby with another caretaker	3.6	3.6	53%	38%
43. How much clothing baby needs indoors and outdoors	4.1	4.1	82%	47%

Table 2

Responses of professionals to videotapes (N=30)

Survey Questions and Responses

---

1. What is your overall impression of the videotapes?

   22 = Excellent 8 = Good
   0 = Fair 0 = Poor

2. In your opinion, which of the following ways to introduce the tapes to parents would be more useful (check all that apply)?

   26 Show them in the mother's hospital room within 2 days after delivery
   23 Give parents a copy to take home, view and return
   18 Show them weekly in the patient lounge to all mothers with premature infants
   17 Show them in the visitors lounge to anyone who is interested
   16 Give parents a copy to keep
   12 Show them in the mother's hospital room before delivery

3. How helpful do you think the tapes would be in meeting the following goals?

   Scale: 0 = not at all effective
   1 = somewhat effective
   2 = very effective

   2.00 Helping parents become familiar with medical equipment and procedures used in the NICU environment
   1.96 Giving parents new and useful information about prematurity
   1.84 Making parents feel more comfortable visiting the NICU
   1.71 Improving families' transition from NICU to home
   1.69 Helping parents feel more confident about caring for their baby
   1.68 Improving parents' interactions with their baby
   1.64 Helping parents become more involved in baby care at the NICU
   1.58 Making parents more competent caregivers for a medically fragile baby
   1.53 Improving parents' relationships with NICU staff

4. Do you think each NICU should have a tape made in their own unit, or does one general tape describing NICUs work for all hospitals?

   19 Individual tapes would be preferred
   7 One general tape would be fine

Table 2

Responses of professionals to videotapes (N=30)

Survey Questions and Responses

---

1. What is your overall impression of the videotapes?

   22 = Excellent 8 = Good
   0 = Fair 0 = Poor

2. In your opinion, which of the following ways to introduce the tapes to parents would be more useful (check all that apply)?

   26 Show them in the mother's hospital room within 2 days after delivery
   23 Give parents a copy to take home, view and return
   18 Show them weekly in the patient lounge to all mothers with premature infants
   17 Show them in the visitors lounge to anyone who is interested
   16 Give parents a copy to keep
   12 Show them in the mother's hospital room before delivery

3. How helpful do you think the tapes would be in meeting the following goals?

   Scale: 0 = not at all effective
   1 = somewhat effective
   2 = very effective

   2.00 Helping parents become familiar with medical equipment and procedures used in the NICU environment
   1.96 Giving parents new and useful information about prematurity
   1.84 Making parents feel more comfortable visiting the NICU
   1.71 Improving families' transition from NICU to home
   1.69 Helping parents feel more confident about caring for their baby
   1.68 Improving parents' interactions with their baby
   1.64 Helping parents become more involved in baby care at the NICU
   1.58 Making parents more competent caregivers for a medically fragile baby
   1.53 Improving parents' relationships with NICU staff

4. Do you think each NICU should have a tape made in their own unit, or does one general tape describing NICUs work for all hospitals?

   19 Individual tapes would be preferred
   7 One general tape would be fine

Table 3

Maternal emotional state, perception of family functioning, and reported impact of the child during the hospital-to-home transition of premature infants

	Hospitalization Time 1		Homecoming Time 2		6 Weeks Post-discharge Time 3	
	M	SD	M	SD	M	SD
Emotional State						
Anxiety	50.0	12.2	41.9	10.4	43.6	11.7
Depression	21.1	11.1	13.4	9.0	16.1	11.0
Family Functioning						
Discrepancy	26.4	12.6	22.1	11.7	23.1	13.5
Change	76.2	20.6	79.7	21.6	74.4	23.9
Intimate support	28.6	5.5	26.5	6.6	25.0	6.6
Impact of Child on Family						
Total impact	—	—	36.6	6.6	37.0	6.3
Coping	—	—	13.0	1.6	12.7	1.9

Table 4

Correlations between Family Functioning Scale subscores within measurement times

	Time 1	Time 2	Time 3
Discrepancy - Change	.12	.32*	.42**
Discrepancy - Int. Support	-.32*	-.47**	-.54**
Change - Int. Support	-.12	-.32*	-.37*

*p<.05. **p<.01.

Table 5

Relation between family functioning and perceived impact of a premature infant on the family (zero-order correlations)

	Time 3 Total impact	Time 3 Coping
Hospitalization (Time 1)		
Discrepancy	.28	-.20
Change	.32*	-.21
Intimate support	-.34*	.39**
Homecoming (Time 2)		
Discrepancy	.34*	-.37*
Change	.65**	-.41**
Intimate support	-.41**	.58**
6 Weeks Post-Discharge (Time 3)		
Discrepancy	.48**	-.30*
Change	.62**	-.39**
Intimate support	-.55**	.58**

*$p < .05$. **$p < .01$.

PROJECT 2.2

TRANSITIONING PRESCHOOL CHILDREN WITH SEVERE AND PROFOUND MULTIPLE DISABILITIES FROM A SPECIAL EDUCATION CLASSROOM PROGRAM INTO MAINSTREAM MONTESSORI PRESCHOOL AND CHILD CARE PROGRAMS

Barbara Thompson, Ph.D., Department of Psychology
Jane Wegner, Ph.D., Department of Human Development

TARGETED TRANSITION PROBLEM

The transition problems addressed in this investigation included: (a) the need to identify strategies for transitioning preschoolers with severe disabilities into programs that can meet the child care needs of their families; (b) the need to develop strategies for transitioning preschoolers with disabilities into programs that provide opportunities for these children to participate in mainstream community preschools with their normally developing peers; and (c) the need to develop strategies for the ongoing transitions that will occur when the children are receiving special education program services for part of their day and mainstream preschool and/or child care services for part of their day. This investigation considered these transition issues as they pertain to the development of a viable program model for preschoolers with severe and profound multiple disabilities.

OBJECTIVES

The overall goal of this project was the delineation of critical factors in the effective transition of preschool children with severe and multiple disabilities from special education early childhood classrooms into community Montessori preschool/child care programs. The specific objectives follow:

2.2-1 To determine attitudes, concerns, and perceptions of the children, families and professionals during transition.

2.2-2 To determine the content and form of preparation and ongoing support needed for transition success.

2.2-3 To determine the degree of integration within the classroom through descriptions of the interactions that occur.

BACKGROUND AND SIGNIFICANCE

A considerable body of literature exists on integrated preschool/child care programs for children with mild and moderate disabilities (Certo, Haring, & York, 1984; Odom & McEvoy, 1988). There is, however, a paucity of such literature pertaining to preschoolers with severe disabilities. The significance of the problem addressed by this project has been well articulated in the professional literature over the past five years. References to the need for turning attention to the integration of children with more severe disabilities and the need for attention to the specifics of implementation and critical features of viable models of full inclusion programs have been addressed both separately and within the same context. For example, in the November 1989 keynote address at the National Conference of the Division for Early Childhood (later reprinted in the Journal of Early Intervention) Philip Strain stated:

> THERE IS NO EVIDENCE THAT CHILDREN WITH CERTAIN HANDICAPPING CONDITIONS OR LEVELS OF DISABILITIES MAKE MORE OR LESS GOOD CANDIDATES FOR INTEGRATION. NOW OBVIOUSLY CHILDREN WITH SEVERE DISABILITIES REQUIRE MORE ACCOMMODATIONS TO MAXIMIZE THEIR GROWTH AND DEVELOPMENT. HERE WE HAVE THE ROOT OF THE CONVENTIONAL WISDOM THAT CHILDREN WITH MILD HANDICAPS ARE BETTER CANDIDATES FOR INTEGRATION. WHAT IS TRUE IS THAT THEY [CHILDREN WITH MILD DISABILITIES] MAY, ONLY MAY, REQUIRE LESS CHANGE IN THE STRUCTURE AND FUNCTION OF CURRENT SERVICE DELIVERY [THAN CHILDREN WITH SEVERE DISABILITIES] TO MEET THEIR LEARNING NEEDS (STRAIN, 1990, P. 293, EMPHASIS ADDED).

Factors related to the successful transition of young children with severe disabilities into community preschool and child care programs must be investigated and identified in order that these youngsters and their families can be afforded needed services and participate in the mainstream of community life. Because of the nature and extent of their disabilities, the transition of this group of youngsters into integrated child care and preschool services must effectively address the issues of environmental modification as well as the social and instructional opportunities offered in integrated settings.

Following is the rationale for the project within the context of several of the most salient issues that it addresses.

Need for Full-day Child Care for Young Children with Severe Disabilities

Klein and Sheehan (1987) documented the increasing need for child care for youngsters with disabilities, including the integration of young children with moderate and severe disabilities into community child care settings. Unfortunately, staff in most existing preschool and child care programs do not feel qualified or prepared to serve children with significant disabilities. In a survey of day care centers in Washington, DC, for example, Berk and Berk (1982) found that only 13 of the 70 centers questioned would accept children with disabilities who were non-ambulatory and not toilet-trained. Among the reasons most frequently offered for nonacceptance were lack of staff training and added program expense.

Two recent statewide surveys in Kansas support these results (Foltz, 1990; Mense, 1990). Both surveys were developed as adjuncts to this project and resulted in a collaboration with the Advisory Committee to the Kansas Coordinating Council on Early Childhood Developmental Services. Mense (1990) surveyed a random sample of preschools, child care centers, group day care homes, licensed home care providers, and registered home care providers, while Foltz (1990) sent questionnaires to all special education early childhood programs and Head Start centers in Kansas. Primary results were as follows. First, there is a substantial need for mainstream child care and preschool services for children with severe disabilities. Special educators and providers of mainstream services are reluctant to place children with severe disabilities in mainstream settings. Second, there is a substantial need for training and ongoing support for programs that will accept children with severe disabilities into mainstream settings. Those factors viewed as barriers (highest to lowest rank) were: accessibility, staff qualifications, full facilities, liability, lack of demand, transportation, funding, and licensing requirements. Those factors viewed as incentives in order of priority were: funds for equipment and adaptations, inservice training, ongoing assistance and consultation, monetary incentives, additional staff, and revised licensing requirements. Third and finally, there is a lack of coordination between special education and early childhood providers to support effective transition into mainstream services.

One solution to this problem of limited or nonexistent child care options for young children with severe disabilities is to identify approaches for child care models and strategies that prepare existing child care programs to accept youngsters with severe disabilities, support the program staff in these efforts, and assist families in accessing these services. Linking child care programs to special education programs and services offers a viable approach. Special education and related service staff can offer consultation and support for children placed in preschools and child care programs on a full-time or part-time basis. If the child receives ongoing services from both a special education program and child care programs, procedures ensure a smooth daily transition between programs are essential, and strategies must also address the programmatic demands of the ongoing transition involved in split program arrangements for preschoolers with disabilities.

Need for Models that Provide LRE for Preschoolers With Severe Disabilities

Integration of children with severe disabilities into "least restrictive environments" (LRE) in school and community has been a clear trend over the past 10 to 15 years (Sailor et al., 1986; Sailor, Halvorsen, Anderson, Filler, & Goetz, 1990). According to Gaylord-Ross and Peck (1985), integrated normalized settings are crucial for students with severe disabilities because they provide opportunities for functional skill development and important social and communicative interactions not available in segregated settings. Brown and his colleagues (1989) also recommend on several grounds that children with severe disabilities be placed in the regular classroom within their designated neighborhood or home school.

Despite the increased focus on the integration of individuals with severe disabilities, the lack of demonstrated full inclusion early childhood program models that include young children with the most severe disabilities is not surprising considering the reluctance on the part of some special educators to include young children with severe disabilities in early childhood special education programs that serve children with mild to moderate delays and disabilities. In fact, it is not an uncommon practice for school districts and communities with large enough population bases to provide categorical services for preschoolers with severe and profound disabilities (Thompson & Guess, 1989; Thompson et al., 1993). A recent article by Demchak and Drinkwater (1992) pointed out that the integration of children with severe disabilities into mainstream programs was still viewed as a controversial issue, although these authors make a strong case for integration. Whether one is referring to the inclusion of young children with severe disabilities into early childhood programs for typically-developing children or special education early childhood programs, the need for modification and the existence of wide developmental discrepancies among children are frequently cited as reasons for exclusion.

To encourage adherence to the principles of LRE, the U.S. Office of Special Education Programs recommended several possible options including linking (even part-time) the program for preschool children with disabilities to other preschool programs operated by public agencies such as Head Start, placing children with disabilities in private preschool programs for typically developing children, or locating classes for preschoolers with disabilities in regular elementary school buildings (Treusch,1989). However, when one turns to the literature to consider implementation approaches that might offer guidelines that could be applied to inclusive preschool programs for children with severe disabilities, the lack of clear "how to" initiate, transition into and maintain inclusive community programs becomes apparent. Peck and his colleagues have pointed out that:

> It is particularly ironic that we know virtually nothing about how mainstream early education programs can actually be developed and maintained within school districts and other agencies. The nontrivial nature of this issue is well known to most human services professionals and researchers concerned with implementation of change in social institutions. There is a pressing need for research that will help professionals better understand and manage the socio-political ecologies within which they attempt to develop and implement innovative programs. (Peck, Hayden, Wandschneider, Peterson, & Richarz, 1989, emphasis added).

Consequently, the development and investigation of any model for the inclusion of preschoolers with disabilities must identify the issues and document the procedures of transition, implementation and sustainability. As noted, the potential greater number of accommodations and strategies needed to include preschoolers with severe disabilities in mainstream preschools makes attention to these issues critical.

Rationale for Consideration of Early Childhood Programs that Subscribe to the Montessori Method as an Appropriate Environment for Inclusion

Thompson and her colleagues (1991) identified a number of practical considerations that make Montessori programs an attractive model for integrating preschoolers with severe and profound multiple disabilities into mainstream child care and preschool services (see also Lillard, 1973). The uniformity of Montessori programs and teacher preparation enhances the probability of replication of procedures across settings. Certified Montessori teachers must meet rigorous performance standards and are well qualified early childhood educators. Additionally, Montessori environments have many features that are associated with developmentally appropriate practice as articulated by NAEYC guidelines (Bredekamp, 1991). These include mixed age groups, child-initiated focus of the classroom, prepared environment that enhances choice and autonomy, and rich array of functional and interesting materials that can meet a wide range of developmental needs. Finally, the Montessori approach is widely followed both within the U.S. and abroad. If Montessorians would make the inclusion of youngsters with severe disabilities a priority and cooperate in the development of a viable model, a positive impact would be made on the current need for integrated preschool programs and child care services for these children. (For other relevant features of the Montessori approach, see Krogh, 1982; Safford, 1989; Thompson et al., 1991; Wegner, 1989.)

METHODS

Project 2.2 focused on the transition of children with severe disabilities from special education preschools into community preschool programs. The project research activities were directed toward delineating critical factors for both initiating and sustaining the transition into an integrated or inclusive mainstream environment. Because of the lack of literature describing models of integration for preschoolers with severe/profound disabilities and because no such programs existed in which research could be conducted, Project 2.2 initiated a program so that data could be collected. Therefore, a major focus of the investigation became the development of a model, or identifying features of a model, that facilitated the process of transition into the program and supported maintenance of the program.

The model employed for this investigation originally involved a split program in which the children attended both a special education classroom program and community preschool for half-days in each program. During the last year of the project (year 5), the children attended only the inclusive preschools and received all their special education and related services in the mainstream programs and, if needed, child care. Another original focus of the model was the implementation of inclusive early childhood programs in Montessori classrooms. However, by the last year, several replication sites were non-Montessori programs. Finally, the model also involved the use of an integration facilitator who is trained to support the full inclusion of the children within the mainstream program. This feature of the model was retained through the entire project, and this role emerged as significant.

SUBJECTS

Children participating in the Project 2.2 investigations are identified in Table 1, which provides descriptive information about the children at the time of transition into the mainstream program. As can be noted from the table, the children were between the ages of 3 and 5 years, and all had assessed developmental levels indicative of a significant delay across all developmental domains. In addition, a number of the children had diagnosed conditions generally associated with very severe disabilities. Table 1 also shows that several of the children had significant and complex health care needs. For example, one of the children (who had a C-1 spinal cord injury) was ventilator assisted, while several had gastrostomy tubes, shunts, etc. Table 2 lists the role groups and numbers of participants other than children who have taken part in Project 2.2 research activities.

DESIGN AND PROCEDURES: OVERVIEW OF PROJECT COMPONENTS

This project was comprised of six major components that provided an overall link between: (a) the development and implementation of a model program and specific investigations directed to the identified research objectives; (b) the qualitative and quantitative studies; and (c) the results and the development of training materials and procedures that were the outcomes of this project.

Component One: Qualitative Analysis. Study I involved an ethnographic investigation of the first two and one-half years of the project. Study VIII involved follow-up of the qualitative data in the original site and collection of parallel data in replication sites, for the purpose of validating the results of Study I as well as expanding information concerning long-term sustainability of procedures and accommodations.

Component Two: Quantitative Analysis (Observational and Single Subject Studies). A series of descriptive, single-subject studies of the children's interactions was undertaken. Studies II and III documented and compared the nature and degree of the interactions in the mainstream and special education preschools. Study IV and VIII were designed to assess the multiple setting variables and accommodations (equipment, materials, devices, facilitator style, training etc.) in the mainstream setting on the interactions in the setting.

Component Three: Development and Evaluation of Training and Resource Material Needed to Support Successful Integration Practices. Materials reflecting effective transition and inclusion practices were developed and field-tested.

Component Four: Replication and Validation in the Original Mainstream Site, and Component Five: Replication/Validation In Another Site. Replication included five major activities related to: preparation for integration, delineation of support for integration, and systematic withdrawal of support from the staff of both programs for planning and conducting transition activities across each replication of a child's transition into a mainstream program.

Component Six: Completion and Dissemination of Reports, Training Materials, and Articles Reporting the Results. The final component was directed to organizing results in a meaningful way and then identifying and using the appropriate dissemination channels for the results as well as the training materials

Design and Procedures: Overview of Studies

A total of eight studies were conducted addressing the three research objectives posed for Project 2.2. Study I was an ethnographic study that sought to portray the events, issues, and meanings of transition of the children from the viewpoints of key participants in the original site and to identify the key strategies that affected the development of the model as well as identifying transitional markers of program evolution. Studies II–VI were a series of observational and single subject studies concerning the nature of the children's interactions and the variables that support positive interactions and child accommodations. Studies II and III described and compared the communication profiles of five children based on an analysis of verbatim transcriptions of classroom interactions as the children participated in a both a segregated Special Education preschool and a mainstream Montessori preschool. Study IV involved a series of reliability analyses and validation of the CEVIT (Coding Environmental Variable and Interactions on Tape), an observational coding system developed for this project as a means of reliability documenting ongoing classroom activities, environmental variables and interactions variables simultaneously. Studies V and V-A employed the CEVIT to compare activities, interactions and environmental variables across the same children as in Study II in both the segregated Special Education Classroom and the mainstream preschool. Study VI employed the CEVIT to compare child interactions, activities and key environmental variables (such as the adaptive equipment as originally targeted) across inclusion facilitators and time. Studies VII and VIII were part of the overall replication activities of the project. Study VII involved a counterbalanced, multiple-probe design simultaneously replicated across four facilitators and eight children in the replication site, and examined the effect of specific facilitation strategies on the participation and interactions of the children. As part of the replication component of this project, Study VIII used qualitative procedures to examine the perceptions of the participants in the replication sites as a means of validating the conclusions of Study I.

The remainder of this section includes a basic overview of each study. Each study's research questions, design, procedures and analysis are briefly described, overall interobserver reliability is reported and major results are summarized.

Study I and Study VIII: Qualitative Investigations

Study I, an ethnographic investigation conducted mostly during Project Years 1 and 2, served as a primary source of data for Objective 2.2-1. Study I procedures and results focused on the events, issues, and meaning of the transition of the children from the viewpoints of those involved. In brief, Study I involved maintaining persistent and prolonged contact; engaging in participant observation; conducting repeated taperecorded open-ended interviews of participants and transcripts validated by participants; maintaining field notes and journals; maintaining systematic observational recording and logs; routinely video-taping participating children (1-2 per week); collecting all referential documents; documenting data sources to create an audit trail; peer debriefing and constant reflection on the data; category building from segments of the data using constant comparison and domain analyses to determine patterns, contrasts and overarching themes; establishing consistency of data units by consensus review and consistency of category definitions; employing thick description to portray qualitative results; and conducting membership check meetings to validate documents.

In addition, replication procedures (Study VIII) included follow-up interviews and surveys of new participants, and the researchers systematically noted issues as they arose in initiating the procedures in new sites. Ongoing replication activities that included monitoring the transition of new children into the original and new program sites in Lawrence during each of the project years and monitoring the transition of children in the replication programs in Kansas City also provided rich sources of data concerning attitudes, concerns and perceptions of the involved participants during transition. Open-ended, semi-structured interviews and short questionnaires to assess parent, child and professional attitudes and behaviors were conducted with 27 participants in the original site and in the replication sites. These interviews were transcribed and, along with the results of a questionnaire also administered to participants, compared to the original set of interviews. Data analysis was as described for Study I. However, special attention was paid to issues that indicated factors that were related to transition and facilitating transition, as well as those that supported or threatened the sustainability of the program in the sites. Finally, a day of group discussions between representative members of the original and replication sites was held in fall 1993, and the minutes taken by focus groups were transcribed.

A follow-up qualitative investigation that also served as a Master's thesis project (Perez, 1992), under the direction of the investigators, studied attitudes and perceptions of eight mothers of typically developing children enrolled in the Montessori program that has served as the original research site. The mothers were nominated by the mainstream classroom teachers because of a special relationship that existed between their child and a classmate with a disability.

Eleven open-ended questions were used to ascertain the family's views toward integration. Four major topic areas that emerged from the interview data were directed toward: (a) parents' identification of the benefits and drawbacks of integration for all involved children; (b) parents' views concerning the importance of having facilitators in the mainstream program; (c) parents' anecdotes portraying the attitudes of the typically developing children's perceptions of their peers with disabilities; (d) parents' opinions about the importance of receiving notification and information about integration programs.

Tables 3 to 12 (from Thompson, Wegner, & Wickham, 1992) report the results of Study I, the initial results of Study VIII, and Perez (1992). These studies are also summarized and discussed in the Outcomes section of this project report. The notes taken from the fall 1993 focus group discussion by participants in both the Lawrence and Kansas City sites are available upon request from the first investigator of this project.

Studies II and III

Table 13 offers a description of the subjects participating in these studies and provides data concerning the results of evaluations conducted by school personnel. These studies examined and compared the communicative interactions of preschool children with severe multiple disabilities in the two original settings, a special education classroom and a community Montessori preschool (Wegner, 1991). The following questions were addressed:

- Do the communication profiles of the children with disabilities differ in the special education program versus the community preschool?
- Do the communication profiles of the communication partners differ in the special education and community preschool?
- Do the characteristics of the interactions in the special education and community preschools differ?

The children were videotaped as they participated in the special education environment in the mornings and the community preschool environment in the afternoons of the same day. Videotaping was done on four occasions for a total of four sampling periods over five consecutive weeks. Twenty minutes of video data were collected as the children participated in the center time/work time activities most comparable between the two settings. The middle 15 minutes of each of the four 20-minute samples per child per setting was selected for transcription. The transcriptions were entered in the Systematic Analysis of Language Transcripts (SALT) program (Miller & Chapman, 1985). Variables of interest were initiations, initiation modes, participatory turns, redirections, interaction boundaries and interaction purposes. The across-subject transcription reliability was 85% and the across-subject intercoder agreement was 94%.

The results are summarized in the Outcomes section of this project report and also depicted in Tables 14 through 18 and in Figures 1 through 12. Table 14 lists the specific communication and interaction variables measured in this study. Table 15 reports the grand means and standard deviations obtained on *t*-test comparisons of the means for significant differences for each variable associated with the children's profiles, the partner profiles and interactions. Thirteen of the 18 comparisons were significant. Tables 16, 17 and 18 report the within-subject means for t-test comparisons for differences between the means for the child profile, partner profile and interactions, respectively. Finally, Figures 1, 2, 3 and 4 graphically display the differences for the grand means and within-subject means for child profile variables, Figures 5, 6, 7 and 8 display the differences for the grand means and within-subject means for partner profile variables, and Figures 9, 10, 11 and 12 show the grand means and within-subject means for interaction variables.

Study IV

Study IV was directed to developing and determining the reliability of an observation tool, the CEVIT: Directions and Code Definitions (Version 2.1) document and data collection form. The reliability analyses were conducted in part and reported in two master theses (Kimura, 1991; Leon, 1992) under the direction of the Senior Investigators. The CEVIT (Coding Environmental Variables and Interactions on Tape) was developed explicitly as a research tool for Project 2.2. As the research for the observational and experimental studies progressed toward both Objective 2.2-2 and Objective 2.2-3, it was determined that a valid and reliable recording tool responsive to the specific variables of interest was needed. It was also determined that the data collection instrument must have the potential for expanded and flexible use beyond this project.
The emergent variables of concern were identified from: (a) the ethnographic research in Study I; (b) the experience with attempts to modify the SICS (Rice, Sell, & Hadley, 1990) for use in Studies II and III; and (c) the results of the verbatim transcriptions of the video data for Studies II and III. Based on this information, preliminary codes and code definitions were piloted for an observational tool that was subsequently named the CEVIT (Coding Environmental Variables and Interactions on Tape).

Key factors impacting on the data collection approach developed for the CEVIT were: (a) the need for on-line data collection on multiple variables that could not all be simultaneously monitored; (b) the intrusiveness of two observers in a preschool setting when reliability was collected using an on-line system; (c) the need for enhanced capability for conducting analyses of the relationships among multiple factors related to transition planning and success; (d) the desirability of having data records (videotapes) that have multiple uses, e.g., transcripts could be made from the tapes for the same time period that was coded using the CEVIT and the two sets of data could then be compared; and (e) the development of a flexible tool that could be adapted for use with single variables and may be used by program staff wishing to monitor or evaluate aspects of integration for individual students' programs.

Reliability analysis of the CEVIT environmental variables. Environmental variables that could be related to the content and form of preparation and ongoing support needed for transition success were identified and selected for the CEVIT. The degree to which these variables might affect the number and nature of the interactions and or responses of the children and adults in the setting were of considerable interest and offered a means of providing quantifiable and objective data relative to Objective 2.2-2.

Procedures for conducting the interobserver reliability analyses were described and the results of the reliability analyses for the CEVIT environmental variables reported in a master thesis

(Kimura, 1991). Reliability analysis included a comparison of four observers' scores on 20 days of videotaped segments of two children in the integrated setting (10 sessions per subject). Interobserver reliability was calculated as percentage agreement (number of agreements divided by the total number of codes [agreements + disagreements] multiplied by 100).

Table 19 summarizes the reliability data on the environmental codes for the mean interobserver reliability data across all the environmental variables as well as the subvariables for each of the two subjects. As can be noted from the reliability means displayed on Table 19, the reliability was consistently very good and generally above the 90th percentile. Means ranged from 80.66% to 100% with an average of 98.35%. The means for the first subject ranged from 96.83% to 100%, while means for the second subject ranged from 80.66% to 100%. The lowest reliability score was for one subject on indoor location (80.66%). An inspection of these data revealed that most disagreements occurred for the subject who was ambulatory and extremely active and that one of the four observers made several consistent errors in judging her location in the room relative to the classroom equipment area (Code E). This error was later avoided by adding a training procedure for observers that required reliability on recognizing each part of the room from a variety of perspectives.

Interobserver reliability analyses of the CEVIT interaction variables. Revisions and reliability analyses for the activity and interaction variables were completed during spring 1992 and reported in a Master's thesis (Leon, 1992) under the direction of the project investigators. Table 20 reports the results of the reliability analyses for the interaction variables included on the CEVIT. Procedures for determining interobserver reliability for interaction variables were the same as those described for environmental variables. In brief, the original reliability analyses included data from 100% of the coded observations of four observers; the data were collected from 20 x 15-minute videotape segments of two children in the integrated and mainstream preschool settings (i.e., 10 sessions per subject). As can be noted from an inspection of Table 21, two methods of calculating reliability are reported for the initial analyses. Method 1 represents a total percent agreement in which reliability is calculated by dividing the agreement of occurrences and non-occurrences by the agreements plus disagreements (Tawney & Gast, 1984). Because this method was viewed as inadequate for the rigor needed in the development of an observational tool such as the CEVIT, a second method of calculating interobserver reliability was employed. Method 2 represents the occurrence agreement method in which reliability is calculated by dividing the agreement of occurrences by the agreements plus disagreements (Tawney & Gast, 1984). The second method (occurrence agreement) was also the method used to determine the reliability of the revised interaction variables reported in Table 20. Revisions in the interaction variables resulted in the merging of several variables and refinement of the definition of several other variables. Interobserver reliability for the revised interaction variables was calculated from 33% of the videotaped segments coded for 12 x 15-minute segments (six from the mainstream setting and six from the special education setting) for one child.

As can be noted from the reliability means displayed in Table 20, the interobserver reliability was generally high with overall reliability at 84% for the revised code. Means ranged from 50% to 99%. The lowest reliability scores occurred for the adult redirects and subject sign variables. The low scores were due, in part, to the extremely low frequency of occurrence of these two variables.

Interobserver reliability analysis of the CEVIT activity variable. The activity variable represents the specific activity in which the child with a disability was engaged during each 10-second observation period. Interobserver reliability for the activity variable was determined from an analysis of data from 100% of four observers' coded scores from 20 x 15-minute videotape segments of two children in the integrated setting (10 sessions per subject). Reliability for the activity variable was calculated by dividing the agreement of occurrences and non-occurrences by the agreements plus disagreements (Tawney & Gast, 1984). The mean reliability for the first subject was 98%, while the mean reliability for the second subject was 94%.

Training for the CEVIT coders. Standard training procedures to ensure reliability of 85% or better for Version 2.1 of the CEVIT: Directions and Code Definitions were piloted with four coders who are in the final stages of training to become reliable coders. The training is predominantly self-directed and includes the following steps that span approximately a month of dispersed training activities:

1. Memorization of the CEVIT directions and code definitions;
2. Viewing the videotaped examples of each variable of the CEVIT code;
3. Memorization of the written subject profiles describing how each subject variable applies to individual subjects;
4. Viewing videotaped examples of each of the subject relative to specific responses;
5. Written test of the CEVIT directions and code definitions;
6. Group practice coding of each of the three sets of variables separately and sequentially;
7. Group practice of all of the three sets of variables;
8. Individual practice coding of all of the three sets of variables;
9. Individual practice coding of each of the three sets of variables separately and sequentially;
10. Individual test coding of all sets of variables for two subjects.

Study V

Several descriptive analyses that employed the CEVIT comprised what a set of "CEVIT studies" that compared children in the two settings. Study V-A, a single case analysis reported as a Master's thesis (Brookes, 1992) under the direction of the principal investigators, described and compared videotaped data collected over a two-year period. This comparison focused on one preschool-age child with severe multiple disabilities who attended both Raintree Montessori School (a mainstream community preschool) and the Early Intervention Preschool (EIP) (a noncategorical university-based special education preschool program).

The questions examined in this study were:

- Can the CEVIT be used to examine and compare Integrated and special education settings?
- Are there differences in the types and number of social interactions that occur in special education versus integrated settings?

- What kind of information does the CEVIT provide about social interactions and environmental variables in a comparison made over a two year period?

Videotaped episodes were selected for analysis from a collection of taped data. The tapes for the segments from 1990 and 1991 were randomly selected from a pool of videotapes collected during those years. The pool of 1990 weeks matched those from the 1990 taped segments in Study II as closely as possible but the segments and days did not match. Data were coded on twelve 15-minute segments: six from the community preschool and six for the special education preschool. Four of the segments were from 1990 and eight were from 1991. Interobserver agreement was collected for 33% of the data points. Point-to-point agreement of occurrences for each of the CEVIT variables calculated. Overall interobserver agreement for the environmental variables was 99% and for interaction behavior variables, 93%. A visual comparison of graphic data and overall differences between mean percentages was used for analysis. The Students' t-test for paired samples was also used to statistically compare the means for each variable. Statistical significance was set at <.05. The results are summarized in the Outcome section of this project report. Additionally, Figures 13 through 30 provide graphic comparisons of the CEVIT variable means for: (a) settings (mainstream and special education); and (b) time (segments from 1990 and 1991).

Figures 13 through 21 display the results of the comparison between settings (Raintree [mainstream] and EIP [special education]). In brief, the results suggest that while adults are rarely absent in either setting from the child with a severe disability, there were significantly greater numbers of adults with the child at any given time in the special education setting. Interestingly, adults provided significantly more physical contact with the child in the mainstream setting. Additionally, there were significantly more peers present with the child in the mainstream setting. While there were more peer contacts, direct and non-direct interactions and peer-initiated signing in the mainstream setting, the differences were not statistically significant. However, there was a significantly greater number of periods of no interaction with peers in the special education program.

Figures 22 through 30 display the results of the comparison between the two settings across two years (1990 and 1991). While differences occurred, none was marked or yielded statistical significance. In general, differences that did occur seemed explainable by the current instructional goals targeted for the child and the availability of equipment.

Another study (Study V-A) conducted as a master thesis (Stegemann, 1993) under the direction of the principal investigators examined the same segments for the same three children reported in Studies II and III, but employed the CEVIT instead of videotape transcriptions for the analyses. Interobserver agreement was collected for 37% of the data points. Questions posed for this study included:

- Do the overall environmental variables differ for the three children between the two settings?
- Do the adult interactions behavior profiles differ between the two settings?

- Do the interaction behavior profiles for the children with disabilities differ between the two settings?
- Do the peer interaction behavior profiles differ between the two settings?
- Do the CEVIT analysis and Studies II/III (Wegner, 1991) results yield similar conclusions?

Point-to-point agreement of occurrences for each the CEVIT variables was calculated. Interobserver agreement across subjects and settings was: 95% for the activity variable, 98% for the environmental variables, and 80% for the interaction behavior variables. A visual comparison of graphic data and overall differences between mean percentages was used for analysis. The Students' *t*-test for paired samples was also used to statistically compare the means for each variable. Statistical significance was set at <.05. In brief the results clearly support the result of Studies II and III, which employed a different analysis of the same data; the mainstream setting was more supportive and facilitative of social and communicative interactions. For example, in the mainstream community program there were significantly more peers with the child with disability, and these peers used more direct, non-direct and signing communication interactions with the children with disabilities. The adults used significantly more physical contacts, nondirected comments and redirections in the community setting. The results are summarized in the Outcome section of this project report.

Study VI

Study VI focused on the role of the paraprofessional integration facilitator and was conducted in part as a Master's thesis (Lit, 1993) under the direction of the principal investigators. The three questions guiding the focus of this study were:

- What variables are associated with facilitator differences?
- To what extent can these differences be associated with differences in children, peers and other adults interactions?
- Are there setting and child differences that cannot be related to facilitator differences?

Two facilitators were compared across each of four children (eight facilitators in total). Videotaped segments from the first three months of each facilitator's tenure in the original community site were used for the random selection of five segments. All of these facilitators were in the original site and had been trained to facilitate and use strategies targeted as important for facilitating interactions and instruction based on the results of Study I. A point-by-point interobserver reliability for occurrence was conducted to obtain a percentage of agreements. Results for overall reliability for each of the four children ranged as follows: 97% for the activity variable, 98% for the environmental variables, and 86% for the interaction variables. Specifically, facilitator differences were examined using the CEVIT by comparing the mean of the daily overall percent of occurrence, and follow up analyses using Mann-Whitney U Tests, Students' *t*-Tests, ANOVAs and Pearson Correlation Coefficients were conducted post hoc to test differences and relationships noted from a visual inspection of the data. In brief, the results of this study indicated that facilitators tend to differ in whether or not they interact with the teacher and aide, which promotes more interaction between the child and other staff, the number of peers present with the child with the disability (4 or more peers present were significantly associated with one facilitator). Typical peers model the facilitator style (e.g., use of direct, redirects, nondirect, and sign communication). The presence of materials and positioning strategies was consistent across facilitators.

Study VII

Study VII addressed training procedures for facilitators and was conducted as a doctoral dissertation (Wickham, 1993) under the direction of the senior investigators. The specific questions that guided this study are as follows:

- Can facilitative inclusionary strategies be performed by paraprofessionals in the community program with a child with severe multiple disabilities or autism?
- Will paraprofessionals use previously learned inclusionary strategies with new children with severe multiple disabilities or autism?
- Will use of facilitative inclusionary strategies by paraprofessionals be maintained after the withdrawal of training?

Four paraprofessionals working with eight preschoolers with severe multiple disabilities or autism in community preschools were taught four strategies to promote interactions between preschoolers with severe multiple disabilities and preschoolers who are typically developing. Individual training and feedback were conducted daily using videotapes of each paraprofessional practicing strategies to promote interactions. A multiple-probe design across two facilitative inclusionary strategy packages was employed to measure these adult-mediated strategies that supported complimentary peer-mediated strategies. Simultaneous replications across four paraprofessionals measured treatment effects across subjects. Maintenance was measured after one month. The CEVIT was employed to evaluate interactive behavior, activities and environmental conditions. Reliability was computed on 40% of the data collected for each instrument. Segments used for reliability analysis were randomly selected. A point-to-point occurrence of agreements was employed for the reliability analysis. Overall reliability was 96% for the CEVIT activity variables, 96% for the CEVIT environment variables, 90% for the CEVIT interaction variables, and 95% for the facilitative strategies.

In brief, the study results indicate that videotape feedback training in strategies promoting interactions among children with and without disabilities can be successfully implemented with paraprofessionals working in inclusive settings with children experiencing severe multiple disabilities or autism, and is maintained after training is completed. Additionally, strategies generalized to children with similar disabilities with reduced treatment effects. Child-to-child interactions increased during training, suggesting that for paraprofessionals to use an adult-mediated strategy that supports complimentary peer-mediated strategies is effective with preschoolers. Additionally, classroom schedule and atmosphere were noted to influence child and peer interactions.

OUTCOMES

The prolonged contact and involvement with programs, staff, families and children over the course of the five years of this project contributed greatly to the interpretation of the studies' results and the identification of important content for the targeted transition issues listed at the beginning of this project report. The investigators have been able to develop a perspective on the short and longer term issues and practices surrounding both the initial transition into a mainstream setting and the sustainability of the transition and to determine content and focus of products best suited to meet the transition needs addressed in this project. Following are descriptions first of the research findings and their implications and a summary of the major products.

PROGRAM FEATURES AND IMPLICATIONS

Classrooms that employ a child initiated, child centered approach such as the Montessori approach to early childhood education are able to sustain the successful placement of young children with severe disabilities.

- Three Montessori placement sites were employed for inclusion relative to this project. The inclusion was successful in all three. Two programs continued to participate in cooperative arrangements with the school district of their respective communities.

- One of these programs began accepting children at the onset of this project, while the other program began accepting children in fall 1992. (A third program began as a replication site in 1990 and was discontinued as a research site in the fall of 1992 for several reasons. First the site was sold to new owners, employing different directors and staff, and ceased to be a Montessori program. Additionally, it was located in the Greater Kansas City area in a different county from the main Kansas City, KS community where the other sites were.)

- Several non-Montessori programs were also used as replication sites for transitioning children with severe disabilities into inclusionary classrooms. While the inclusion of the children placed in these programs was maintained through the school year of their placement, the ease of meeting the needs of the child within the context of the regular program activities depended considerably on the degree of child-directed versus teacher-directed activities employed in the program.

- The child care components were consistently used by families and were often the reason they preferred one community program over another.

- Another factor that seemed on a subjective basis to affect acceptance and success was the degree to which both the program director and program teachers held philosophy and mission centered around meeting the needs of children. Examples of programs that operate explicitly from a mission are Montessori programs, and Head Start and NAEYC accredited programs. At the end of the fifth year, two Head Start programs and one NAEYC program had also joined into the inclusion components of the two district programs that expanded the Project 2.2 model.

Critical features and value base developed by Project 2.2 participants are discussed in depth in the Handbook (Thompson et al., 1993) produced by this project.

Interactions

For children with severe disabilities, the child's experiences with interaction partners and the child's own communication are significantly different quantitatively and qualitatively in inclusive programs compared with segregated programs.

- Children with severe disabilities have significantly more peer partners and more communicative interactions in mainstream preschools than in special education preschools.
- When compared with adult partners in a special education program, adult partners in a mainstream program are more facilitative of communication in their interactions with children with severe disabilities. In other words, they invite response, offer choice, redirect others to interact with the child, and interpret the child's nonverbal responses as communicative significantly more often than the partners in a special education program.
- When compared with adult partners in a mainstream program, adult partners in a special education program are more directive in their interactions with children with severe disabilities. In other words, they give commands and instructions significantly more often than the partners in a mainstream program.
- The children with disabilities initiated more frequently and took more participatory turns while in the community preschool.
- The partners in the mainstream preschool initiated more frequently, took more turns, and used more redirections than the partners in the special education preschool.
- The children with disabilities interacted with more children in the community preschool than in the special education preschool.
- The children with disabilities interacted with more adults in the special education preschool than in the community preschool.

Implications for facilitating interactions. In a 1991 article that spoke to critical needs for a next decade of research on the effectiveness of early intervention, Michael Guralnick emphasized that children with more severe disabilities constitute an important group that requires attention and that in relation to this group we need to reflect on whether or not we are measuring the right outcomes. He also pointed out that for this group as well as others, it is very possible that further refinements in family involvement may be of considerable value, and maximizing the configuration of program features that constitute best practice may also yield important additional benefits.

These comments were made in relation to the lack of demonstrated outcomes of integrated programs for children with severe disabilities when outcome primarily considered assessed developmental gains. If one assumes that outcomes must reflect skill gains on independent tasks, outcomes for children with severe disabilities often seem limited to nonexistent. However, when the shift is made to more qualitative outcomes (as this project examined via opportunities to interact, to self-initiate, to have partners, to be a part of activities and to communicate via nonverbal and often nonsymbolic means), inclusive mainstream settings appear to offer the "configuration of program features" that may constitute best practice. The results suggest that for children with severe disabilities, a mainstream preschool was more supportive of communicative competence than was the special education program and that communicative behavior of the children with disabilities was strongly influenced by contextual variables. The contextual variable that appeared to have the greatest influence was that of partner interactional style. The partners in the community preschool were more facilitative and child-centered than those in the special education preschool. As noted this was evidenced by more helping versus teaching interactions in the community preschool. The partners in the special education environment were more directive and goal-oriented. Educationally, the results suggest that if the special education program is representative of prevailing practice, special educational instructional strategies could limit the opportunities of young children with severe disabilities to demonstrate the communicative competence they possess and may actually hinder communication development. In reviewing important program features, the investigators have concluded that programs that meet NAEYC guidelines for developmentally appropriate practices or are certified by the American Montessori Society or Association of Montessori Internationale seem to be indicated.

Typical peers. Children with typical development or mild disabilities model the way in which adults communicate with children with severe disabilities. If adults are facilitative partners, the children are more facilitative partners; if adults are directive partners, the children are more directive and more likely not to elect to be near or involved in cooperative activities with a child who has severe disabilities.

While children are apt initially to place a child with severe multiple disabilities on a par with infants and toddlers, this view diminishes over time when information about the child and his or her disabling condition is offered to the typical peers.

Children with severe disability do form special relationships (friendships) with some of their typical peers that appear to be mutually satisfying and maintained over the period that the children are in the classroom together. Evidence of such friendships includes reports of children's comments to their parents, invitations to play or attend parties, and consistent interactions over time between the children as noted in observational episodes that record the presence of peers. Same age peers who are friends with children with disabilities learn to use supportive strategies that are related to physical management (e.g., supporting head, assisting grasp, supporting and moving hand and arm, supporting trunk, wiping saliva from chins, assistance with eating, pushing wheel chair, getting positioning materials, presenting and handling materials, interpreting communications of the child with a disability, and selecting activities which the child obviously enjoys).

Implications for facilitating relationships between typically developing preschoolers and preschoolers with severe disabilities. The results of this project confirm the importance of the role of the adult partner in the development and maintenance of peer interactions. Essentially the adult must initially mediate peer interactions by offering support for the interactions. Strategies that were successfully employed include: inviting participation, answering questions, offering content for interactions on behalf of the child with the disabilities, teaching peers to interact directly with the child with a severe disability, and fading from child-to-child interactions when appropriate. Preparation for first meeting the child with a severe disability, while often part of inclusion programs for school-age children, need not be extensive with very young children since for the latter, attitudes are still being formed rather than changed, and information is sought quite naturally.

Environmental Accommodations

Accommodations (such as adaptive equipment for supporting positions, adaptive communication devices, and the accessibility of materials) are comparable with those provided in high quality special education classrooms and suggest appropriate and highly engaging environments can be provided in mainstream community programs. However, attention to replicating the typical children's position and keeping the child with a disability on as close a level as possible is important.

The length of time a child with a severe disability engaged in a single activity was consistently longer in the community preschool than in the special education class, although the difference was not significant. Furthermore, children with disabilities tend to spend more time on activities within a mainstream program over time.

The use of specific equipment does not appear to negatively affect interactions between children. In fact, using a device such as an augmentative communication device in an inclusive program offers many more opportunities for practice in using the device with speaking partners who are also peers in natural situations.

Considerable difficulty and time are involved in identifying appropriate assistive technology devices such as augmentative communication devices as well as in programming them, identifying appropriate and functional child positions to facilitate effective use of the devices, and training staff to use the devices correctly. These factors provide substantial roadblocks to the availability and use of augmentative devices in a mainstream setting that are very similar to the problems faced with these devices in self-contained special education programs and must be addressed in transition planning for this population of children.

Implications for environmental accommodations. Environmental accommodations should be planned through ongoing environmental assessment, but should not be a reason for not considering placement in a mainstream program. On a subjective basis, it consistently seemed that the focus in mainstream settings was on how accommodations would enhance participation and how to make accommodations as natural as possible, whereas in special education settings the accommodations were more likely to be preplanned and activities selected that would be possible with the accommodations. Ongoing support for assistive technology applications is critical.

Parents of Children with Disabilities

The concerns and fears expressed by parents of children with disabilities and personnel prior to the onset of transition into inclusive environments are consistent with a body of emergent literature.

- Parents who have experience in special education programs with high staff-to-child ratios sometimes express concern over lack of contact with the regular education teacher.
- Parents are less likely to attend general early education conferences and programs than the explicitly "special education" components of the program.
- Parents as personnel tend to become more positive about the effects of inclusion on children with severe disabilities after their direct participation in a program.
- Participation in an inclusive early childhood program appears to affect the parent's placement preferences for inclusive school age services and this impacts on transition issues from early childhood to school-age services for young children with severe disabilities.

Implications for responding to parents of children with severe disabilities in inclusive preschools. Over the five years of this project, we experienced a shift in parents' awareness of inclusion. Initially we had to invite parents to consider participating, whereas parent are now requesting inclusive placements. This has obvious implications of a far-reaching nature. Whether or not the parents requested the placement, activities and strategies for involving and informing parents are critical (e.g., tours of program, involvement in environmental assessment, small group meetings with veteran parents, a handbook, etc.) A way of ensuring ongoing and frequent communication is very important. Daily notebooks are useful. The facilitator, teacher, and itinerant special education support team can all communicate in writing. Parent should participate as members in a core team that meets on a biweekly to monthly basis to problem solve and plan participatory strategies in the classroom. The MAPS approach for initiating holistic focus around the child is also useful. Formal ways of linking these families with families of typically developing children who are in the program are needed.

Parents of typically developing preschool children. Parents of the typically developing children support the concept of integration at the preschool level and recognize that integration can be beneficial for their typically developing children as well as for the children with disabilities. More specifically, mothers stated that exposure to people with disabilities fostered acceptance and contributed to important changes in society.

All parents brought up the role of the integration facilitator without prompting by the interviewer or in response to a specific question. All indicated that the addition of a knowledgeable person who could assist the teacher and the child with a disability was the most important factor in making the program work.

Parents indicated that while their children expressed acceptance and positive regard for their peers with disabilities, their children did not talk much about their peers with disabilities at home or describe any special type of relationship with them. Parents said that their children talked about the children with disabilities in the same manner as they spoke of the other children in the school, although parents were also quite sure that their children were aware of the peers' disabilities.

The parents indicated a lack of specific knowledge about integration programs and, while they would have liked to know more about the program in which their child participated, this did not affect their positive attitudes toward the concept of inclusion or the program at Raintree Montessori School.

In general, parents of typically developing children are open and supportive of the inclusion of children with severe disabilities under the circumstances of this project, in which the number of children with disabilities in a single classroom generally reflected the natural proportions in the population at large.

Implications for dealing with parents of children with typical development. Parents of typically developing children can be wonderful resources. While the project activities did not explore strategies for this, the results suggest that parents could be educated and involved at the same time if this were accomplished. Linking families to families of children with severe disabilities to enhance the feeling of belonging on the part of the parents of the child with a severe disability is recommended.

Personnel Roles and Training

- Role confusion and frustration are major factors that can negatively affect satisfaction across personnel and are particularly related to satisfaction of the special education teacher and the paraprofessionals who act as a facilitator to a child with severe disabilities in a mainstream classroom.

- Direct staff training on facilitative strategies that support child-to-child interactions is necessary to ensure their application in the classroom. Training procedures must be also employed to ensure that these strategies are generalized to other children and that maintenance of the procedures over time occurs.

- Paraprofessionals used to support the inclusion of children with disabilities at times appear to negatively affect the frequency with which the regular early childhood teacher interacts with the child. While ongoing classroom support is needed to accommodate children in early childhood classrooms with the common ratios of 2 adults to 20-24 children, more research on teaching personnel about their roles and how to fade from the child with a disability is needed.

- When inclusive or integrated programs exist within a community, competition may occur between the two program staffs. For example when the split program was used (in which children attended a special education classroom for half-days and a community preschool for the remaining half-days), which program the child should be in became an issue, even though it was not directly voiced. When one component of a school district moved to full inclusion and the other component did not in the community targeted for replication, the program approach was an dividing issue.

- The results indicate that the integration facilitator model employed in this project has the potential to be beneficial with respect to communicative competence and development as well as supportive of integration of young children with severe disabilities in mainstream preschool settings. However, paraprofessional staff are likely to miss opportunities to invite and encourage participation between typically developing preschoolers and a child with severe disabilities unless directly trained to do so.

- Paraprofessional with good child skills attract more partners for the child. Parents with good adult communication skills are better accepted by the general early childhood teacher.

- Direct training using videotaped episodes of the child and the paraprofessional in an inclusive classroom setting is an effective way to train the use of strategies that facilitate child-to-child interactions. Indirect training in facilitative techniques for one child appears to generalize to other children, but direct training using videotapes is considerably more powerful. However, training on facilitative techniques does seem to maintain over time.

Implications for personnel roles and training. The outcomes listed above are obvious in their implications. In brief the broader implications suggested by these outcomes include the following. Personnel must become acquainted with the nature of system change. Efforts to reduce role confusion and enhance role clarity are important. Opportunities to affect one's own role and to communicate with other members of the team about issues affecting role are needed. Ongoing training is important and needs to directly address the skills and strategies required for the classroom as well as with other team members and families. Personnel preparation programs must prepare students to function in interagency, transdisciplinary and inclusive programs. School district and professional inservice education must also address this training need. Combining early childhood and special education early childhood programs would eliminate one of the biggest areas role confusion and complexity.

PROJECT 2.2 PRODUCTS

Videotapes and Accompanying Manuals

Three video tapes and a supporting manual for each tape were produced (Thompson, Ault, & Guess, 1990) with funding from the National Institute for Disability and Rehabilitation Research to the senior investigator. The tapes were published in 1992 by Learner Managed Designs, a video and print publishing company that focus on young children with severe disabilities and special health care needs.

A Circle of Inclusion (27 minutes) focuses on the successful inclusion of three children with severe disabilities in a community early childhood and child care Montessori program. The perspectives of special education and mainstream early educators, administrators, families and children are shared and participants concerns and experiences during transition into this inclusive program are addressed.

The Process of Communication (10 minutes) demonstrates strategies for facilitating child-to-child interactions that include young children who experience severe disabilities.

The Process of Instruction (11 minutes) demonstrates the instructional strategies used in a mainstream Montessori preschool to foster the instructional inclusion of young children who experience severe disabilities.

The script for A Circle of Inclusion was developed using a membership check process from a document developed from the participants' interviews and other data gathered during Study I of this project. The procedure selected for the second and third tapes also emerged as the most important procedures from the viewpoints of the participants in Study I and are also reflected in the Training Checklists and Handbook described below. The tapes were piloted with over 300 persons interested in inclusion issues in early childhood special education. The feedback was extremely positive, with consistently superior ratings and extensive positive comments. The tapes were also reviewed by selected professionals with recognized national expertise in: (a) inclusion issues in special education, (b) early childhood special education, (c) special education for individuals with severe disabilities, (d) early childhood education, and (e) the Montessori method of early childhood education.

Books

Handbook for the Inclusion of Young Children with Severe Disabilities: Strategies for Exemplary Programs, (Thompson, Wickham, Wegner, Ault, Shanks, & Reinertson, 1993, published by Learner Managed Designs, Lawrence, KS). A second version is in preparation that will focus on those procedures that apply to non-Montessori preschool programs as well. This was determined to be highly desirable based on the considerable interest in this information, on the successful expansion of the project to two mainstream preschools (one of them not Montessori), and the obvious transferability of many of the strategies.

Revisiting the Potential of the Children's House. A Handbook for Planning and Implementing the Integration of Young Children with Severe Disabilities in Montessori Preschool and Child Care Programs. (Shanks & Thompson, in revision for publication with NAMTA). This manual is a training handbook to assist others in replicating integrated preschool and child care programs in Montessori preschools. The handbook was developed as a Master's thesis project has recently been submitted to the North American Montessori's Teachers Association (NAMTA). Revisions for a published version are under way.

Checklists

Initiating Early Childhood Mainstream Programming for Young Children with Severe Disabilities: A Checklist for Considering and Planning Start Up Activities was developed to guide programs to attend to 10 components identified as critical to successful transition. It is included in the appendices of the published Handbook.

Facilitating the Integration of Young Children with Severe Disabilities in Mainstream Early Childhood Programs: A Checklist for Considering and Planning Content and Activities for Training Personnel was developed as a guide for planning the training of personnel who will be involved in facilitating the integration of a child with severe disabilities in mainstream early childhood programs. It is included in the appendices of the published Handbook.

The Circles of Inclusion Project: IEP Observational Matrix was developed to plan for and measure implementation of IEP objectives in an integrated setting without obtrusive data collection. The matrix allows for recording of the positioning or seating of the child to participate in the activity, who initiated the activity, the skills identified on the IEP, and the activities that occur in a child centered program. It is described and reproduced in Chapter 7 of the published Handbook.

Integration Observation Evaluation was developed as an evaluation form to give meaningful and complete feedback to anyone learning integration facilitation strategies. It was developed jointly between the project staff and practicum supervision staff in the area of Severe Multiple Disabilities and Early Childhood Special Education in the Department of Special Education at the University of Kansas and continues to be used. Additionally, it is included in the Appendices of the published Handbook.

Initial/Probe Mainstream Teacher Satisfaction Checklist was developed to solicit feedback on the performance of the integration facilitator and success of the child's integration into the mainstream classroom from the perspective of the regular early childhood teacher in charge of the mainstream classroom. This approach was suggested in the Handbook, but the checklist is not included. (It is contained in the Appendix accompanying this report.)

IMPACT

Indicator One: Individual children who participated in the project have continued on into inclusive school age services.

A number of the children who have participated in this project have, on the request of their parents, and with the full support of the early childhood special education and early childhood personnel who participated in the inclusive mainstream early childhood programs. For example, currently 11 of the children shown in Table 1 are in full inclusion elementary classrooms with their same-age peers. Essentially what these results suggest and are perceived to mean by those involved in the programs is that once a child has been in a full inclusion model, families are not comfortable with segregated services as children transition from early childhood services to kindergarten and elementary school services.

Indicator Two: School districts have adopted the project's inclusion model.

The model for the inclusion of young children with disabilities and for transition into inclusive services of young children with severe disabilities has been formally incorporated into the school districts' early childhood service delivery system in the two communities in which the original site and the replication sites were located. In April 1992, two proposals were developed via a collaborative effort among Project 2.2 investigators, early childhood special personnel and mainstream community preschool staff from programs serving as research sites in Lawrence (original site and validation sites) and Kansas City, KS (validation sites). Both proposals were awarded three-year funding from the Kansas State Board of Education to assist the LEAs in formally incorporating the early childhood inclusion model and strategies under investigation in Project 2.2. Consequently, special education and related services are delivered to young children with disabilities in mainstream community preschools as part of the mandated LEA early childhood program services. Relative to direct project participation, staff in 23 preschool classrooms within 10 mainstream early childhood programs as well as staff in three early childhood special education programs in these two communities have been trained to implement inclusive programs for children with severe disabilities.

- The Lawrence system (Project LIM, Lawrence Inclusion Model) has expanded inclusive services to cover six community preschools and involves children with the full range of delays and disabilities (i.e., mild to severe/profound). Approaches in this model include: (a) employment of an early childhood special education teacher in two community preschools that hold placement openings for children with disabilities; (b) child placement and early childhood special education services in two additional community preschools that also hold placement openings for children with disabilities; and (c) early childhood special education services in additional community preschools in which children are already enrolled when they are identified as eligible for early childhood special education services.

- The Kansas City, KS system (Project WIN, Wyandotte Cooperative Inclusion Network) includes children with severe and profound multiple disabilities and children with autism Children are placed in classrooms with typically developing children that are part of community service centers established as interagency community programs designed to meet the needs of families living in urban settings, in private community preschools, Head Start preschools, and Chapter One preschools housed in public schools.

Indicator Three: Transition and inclusion strategies have been extended to kindergartens

Additionally funding from the Office of Special Education Programs, U.S. Department of Education for a three-year outreach project was awarded to the senior project investigator to implement strategies needed to transition the young children with severe disabilities who participated in inclusive early childhood programs in Project 2.2 into inclusive kindergartens in Kansas City, KS

Indicator Four: Individuals nationwide have acquired information about inclusion of young children with severe/profound disabilities through this project

Seventeen Master's degree students have directly participated in the project as part of their training programs or as project assistants, and two doctoral students have directly participated in the project. Two doctoral dissertations and 10 Master's theses were completed as part of this project. Additionally, the Project 2.2 research sites became observation and practicum sites, offering students in early childhood, early childhood special education and the related services opportunities to actually see the integration of young children with severe disabilities and to develop and practice skills during practicum situations.

Additionally, the information obtained from the project and the project model was regularly disseminated in the Early Childhood Special Education Training Program at the University of Kansas. Information as it pertained to personnel roles and strategies for inclusive programs was included as part of the course information. The videotapes developed as an adjunct to this project are regularly shown in several courses and the Handbook is required reading in the Advanced Methods Course in Early Childhood Special Education.

The videotapes are distributed nationwide via two publishing groups. One publisher, Learner Managed Designs, distributes primarily to a special education audience. The other, the North American Montessori Teachers Association (NAMTA), distributes to professionals Montessori settings nationwide.

The Handbook is published, advertised and distributed nationally.

Invited training related to the project has been conducted at 20 specific workshops conducted as part of national and state conferences, specific statewide outreach programs, and school district level inservice. Information about and results of this project have been disseminated at 21 presentations at national and state conferences.

RECOMMENDATIONS

Specific recommendations for the multiple factors related to the inclusion of young children with severe disabilities are identified in the Outcomes section of this report. Consequently this section will point to the need for further research and system-change actions.

- More research on staff training to use facilitative strategies is needed. Specifically a replication study of Study VII is needed and the procedures should be validated across a broader range of strategies and for longer periods of time.
- There is significant need for research that investigates when an adult should fade from interactions and how to recognize when child-to-child interactions should occur.
- There is a need for refinement of instruments and procedures that assess multiple variables of interest in inclusive settings that include young children with severe disabilities who are nonverbal and experience multiple physical challenges. While the CEVIT offered useful data, it lacked a specific measure of engagement and child affect that need to be taken into account. Modifications of the CEVIT to reduce time and complexity are also needed.
- Follow-up and longitudinal studies on both the children with disabilities and their typically developing peers who participated in inclusive early childhood programs are needed.

- A system that enhances the multi-agency approach that is currently required to find inclusive placements and child care for young children with disabilities must be identified. Currently, many policies must be worked around to create the required linkage to initiate and maintain inclusive early childhood arrangements like those created as a result of this project. The cost response to create these linkages is considerable.

- Restructuring of personnel preparation programs in early childhood and early childhood special education must occur to prepare inclusive early educators. Related service professions and early education programs must prepare personnel to function in collaborative and family-focused teams.

REFERENCES

Berk, H.J., & Berk, M.L. (1982). A survey of day care centers and their services for handicapped children. Child Care Quarterly, 11(3), 211-214.

Bredekamp, S. (1991). Developmentally Appropriate practice in early childhood programs serving children from birth through age 8 (expanded). Washington, D.C.: National Association for the Education of Young Children.

Brooke, T.L. (1989). The comparison of an integrated setting versus a special education setting using the CEVIT (Coding Environmental Variables and Interactions on Tape). Unpublished Master's thesis, University of Kansas, Lawrence, KS.

Brown, L., Long, E., Udvari-Solner, A., Davis, L., VanDeventer, P., Ahlgren, C., Johnson, F., Gruenewald, L., & Jorgensen, J. (1989). The home school: Why students with severe intellectual disabilities must attend the schools of their brothers, sisters, friends, and neighbors. Journal of the Association for Persons with Severe Handicaps, 14(1), 1-8.

Certo, N., Haring, N., & York, R. (Eds.) (1984). Public school integration of severely handicapped students: Rational issues and progressive alternatives. Baltimore: Paul H. Brookes Publishing Co.

Foltz, J. (1990). Service assessment of special education and Head Start centers for children with special needs: A descriptive analysis of a Kansas statewide survey. Unpublished Master's thesis, University of Kansas, Lawrence, KS.

Demchak, M.A., & Drinkwater, S. (1992). Preschoolers with severe disabilities. The case against segregation. Topics in Early Childhood Special Education, 11(4), 70-83.

Gaylord-Ross, R., & Peck, C.A. (1985). Integration efforts for students with severe mental retardation. In D. Bricker & J. Filler (Eds.), Serving the severely retarded: From research to practice. Reston, VA: Council for Exceptional Children.

Glaser, B.G., & Strauss, A.L. (1967). The discovery of grounded theory. Chicago: Aldine.

Guralnick, M.J. (1990). Major accomplishments and future directions in early childhood mainstreaming. Topics in Early Childhood Special Education, 10(2), 1 - 17.

Hadley, P. (1989). Social-conversational patterns of speech and language delayed children in an integrated classroom setting. Unpublished Master's thesis, University of Kansas, Lawrence, KS.

Kimura, L. (1991). The CEVIT (Coding environmental variables and interactions on tape): A tool for observing young children with severe multiple disabilities in an integrated Montessori school. University of Kansas, Department of Special Education.

Klein, N., & Sheehan, R. (1987). Staff development: A key issue in meeting the needs of young handicapped children in day care settings. Topics in Early Childhood Special Education, 7(1), 13-27.

Krogh, S.L. (1982). Affective and social development: Some ideas from Montessori's prepared environment. Topics in Early Childhood Special Education, 2(1), 55-62.

Lillard, P.P. (1973). Montessori: A modern approach. New York: Schocken Books.

Lit, T.L. (1993). A comparison of integration facilitators of young children with severe disabilities in an inclusive preschool setting. Unpublished Master's thesis. University of Kansas, Lawrence, KS.

Mense, J. (1990). Service assessment of child care and preschool program availability for children with special needs: A descriptive analysis of a Kansas statewide survey. Unpublished Master's thesis, University of Kansas, Lawrence, KS.

Miller, J., & Chapman, R. (1985). Systematic Analysis of Language Transcripts (SALT). Language Analysis Laboratory, Waisman Center on Mental Retardation and Human Development, University of Wisconsin, Madison, WI.

Odom S., & McEvoy, M. (1988). Integration of young children with handicaps and normally developing children. In S. Odom & M. Karnes (Eds.), Early intervention for infants and children with handicaps. Baltimore: Paul H. Brookes Publishing Co.

Rice, M., Sell, M., & Hadley, P. (1990). The social interaction coding system (SICS): An on-line, clinically relevant descriptive tool. Language, Speech and Hearing Services in the Schools, 21, 2-14.

Safford, P.L. (1989). Integrated teaching in early childhood: Starting in the mainstream. White Plains, NY: Longman, Inc.

Sailor, W., Halvorsen, A., Anderson, J., Goetz, L., Gee, K., Doering, K, & Hunt, P. (1986). Community intensive instruction. In R. Horner, L. Meyer, & H.D. Fredericks (Eds.), Education of learners with severe handicaps: Exemplary service strategies. Baltimore: Paul H. Brookes Publishing Co.

Sailor, W., Halvorsen, A., Anderson, J., Filler, J., & Goetz, L. (1990). Phase I: Mainstreaming young children with disabilities. In W. Sailor, A. Halvorsen, J. Anderson, J. Filler, & L. Goetz (Eds.), Elements of community instruction: Methods and research. Baltimore: Paul H. Brookes Publishing Co.

Strain, P.S. (1990). LRE for preschool children with handicaps: What we know, what we should be doing. Journal of Early Intervention, 14, 291-296.

Tawney, J.W., & Gast, D.L. (1984). Single subject research in special education. Columbus, OH: Charles E. Merrill.

Thompson, B, & Guess, D. (1989). Students with the most profound multiply handicapping conditions: Teacher perceptions. In F..Brown & D. Lehr (Eds.), Persons with profound disabilities: Issues and practices (pp. 3 - 41). Baltimore: Paul H.Brookes Publishing Co.

Thompson, B., Wegner, J., Wickham, D., Shanks, P., Reinertson, B., & Ault, M.M. (1989). An investigation of the transition and integration of preschoolers with severe and profound multiple disabilities into a Montessori community preschool program: Activities in progress and preliminary results. Working Paper, Kansas Early Childhood Research Institute on Transitions, University of Kansas, Lawrence, KS.

Thompson, B., Wickham, D., Ault, M. M., Shanks, P., Reinertson, B., Wegner, J., & Guess, D. (1991). Expanding the circle of inclusion: Integrating young children with severe multiple disabilities. Montessori Life, 1, 11-14.

Thompson, B., Wickham, D., Wegner, J., Ault, M. M., Shanks, P., Reinertson, B. (1993). Handbook for the inclusion of young children with severe disabilities: Strategies for implementing exemplary full inclusion programs. Lawrence, KS: Learner Managed Designs.

Treusch, N. (1989). Preschool aged children with handicaps in the least restrictive environment. Preschool Grants Memorandum. Washington, D.C.: Office of Special Education Programs, U.S. Department of Education.

Wegner, J. (1989). Opportunities for communication intervention with preschool children with severe disabilities. Unpublished manuscript, University of Kansas, Department of Speech, Language and Hearing, Lawrence.

Wegner, J (1991). From classroom to classroom: New ways to interact. Unpublished doctoral dissertation. University of Kansas, Lawrence, KS.

Table 1. Descriptive information about the children with disabilities participating in Circle of Inclusion Project at the time of entry into mainstream program

Subject/ Number	Mainstream Transition Date	Age in Months	Gender	Diagnosed Condition	Assessed Development in Months at Entry into Mainstream Program[a]			
					cognitive	social	language	motor
DD 1	10/6/86	39	F	Deaf-blind Cerebral Palsy	0-6[b]	6-18	0	g. 0-6 f. 0-6
CS 2	2/1/88	41	M	Cerebral Palsy Microcephaly	1-6	8-15	e. 3-8 r. 3-9	g. 2-5 f. 1-4
MA 3	2/1/88	56	M	Deaf-blind	3-8	6-9	e. 4-6 r. 6-7	g. 5-6 f. 5-9
JF 4	2/8/89	39	M	Cerebral Palsy	3-6	6-7	e. 6-7 r. 10	g. 3-6 f. 3
CA 5	2/8/89	35	M	Cerebral Palsy	6-9	9-15	e. 4-6 r. 8-10	g. 6 f. 3-6
GM 6	4/3/89	46	M	Down Syn.	22-27	28-30	e. 28 r. 28	g. 24 f. 26
MA 7	4/3/89	51	F	Down Syn.	36-48	36-39	e. 34 r. 32-37	g. 26 f. 24
SD 8	9/28/89	52	F	Cerebral Palsy Visual Imp.	11-12	11-18	e. 8-9 r. 8-10	g. 6-15 f. 12-15
SB 9	9/10/90	60	F	Cerebral Palsy Microcephaly	24-36	24-36	e. 19 r. 36	g. 18-21 f. 6-15
SW 10	9/10/90	56	F	Down Syn.	30-42	32-34	e. 19 r. 8-30	g. 18-21 f. 28
LB 11	4/18/91	65	F	Cerebral Palsy	12-24	10-30	18-24	g. 12 f. 12-15
NA 12	9/3/91	52	M	Sp-Lang. Delay Hearing Imp.	18-24	16-24	e. 4-12 r. 3-18	g. 12-24 f. 12-21
LW 13	9/16/92	45	F	Cerebral Palsy Visual Imp.	6-9	3-6	e. 3-24 r. 3-18	g. 12-24 f. 12-21
MG 14	9/17/91	60	M	Down Syn.	27-32	25-36	e. 18-21 r. 25	g. 18-41 f. 15-35
MB 15	11/27/91	62	M	Trisomy 6	9-18	6-18	e. 6-9 r. 3-6	g. 4-9 f. 4-7
BS 16	12/9/91	48	M	Cerebral Palsy	0-9	0-9	e. 0-9 r. 0-9	g. 0-6 f. 0-9
DW 17	12/11/91	54	M	Meningitis Hydrocephaly	24	no score assigned	e. 28 r. 27	g. 19-24 f. 18-27
RH 18	1/1/92	38	M	Developmental Delays	18-24	18-24	e. 16-18 r. 18-24	g. 12 f. 18-20
CB 19	2/4/92	64	F	DeMorsier's Syn. Cerebral Palsy	6-9	6-9	7-8	g. 8-9 f. 8-9
TM 20	2/17/92	46	F	Cerebral Palsy	1-15	0-6	e. 4-13 r. 4-13	g. 3-9 f. 3-9

[a] Scores obtained from developmental assessments conducted by interdisciplinary professional team in special education program

[b] Represents a range of subscores in months (e.g., 3 to 6 months)

e. = expressive language score & r. = receptive language score; g. = gross motor score and f. = fine motor score

Table 2. Transcribed interviews of participants in Circle of Inclusion Project

Role	Number of Participants	Number of Interviews	Average Length of Transcribed Interview in Pages
Mainstream Administrator	1	2	30
Mainstream Preschool Teacher	3	6	26
Mainstream Teacher Aide	1	1	28
Special Education Lead Teacher	1	2	25
Integration Facilitator	4	8	28
Parent of Child with Severe Disability	5	9	26
Parent of Typically Developing Child	8	8	8
Special Education Support Staff	3	6	25
Facilitator Focus Group Interviews	4	4	60

Table 3. Referential data: Circle of Inclusion Project

- Videotapes of children in classrooms (each child is taped once or twice per week)
- Participant field notes collected by Facilitators
- Reports (anecdotes) from Facilitators and teachers on typically developing children's comments/ actions
- Anecdotes reported by parents of children with disabilities
- Anecdotes reported by Raintree teachers and Integration Facilitators
- Observation field notes collected by project staff
- Peer debriefing notes
- Journal and telephone notes
- Meeting agendas and minutes for special education/mainstream staff meetings
- Pictures of children integrated on Raintree activity board
- Construction and adaptations of facilities (ramp, raised gardens, raised sandboxes)
- Presence/purchase of adaptive equipment for children (wedges, adapted potty chairs, swim rings, etc.)
- Parent newsletters with mention of integration project
- Individual Education Plans (IEPs)
- Parent notes
- Written communications from physicians concerning procedures in mainstream setting
- Conference programs
- Letters from visitors

Table 4. Research procedures employed in qualitative investigation

- Maintaining persistent and prolonged contact
- Engaging in participant observation
- Conducting repeated tape-recorded open-ended interviews of participants and having the transcripts validated by the participants
- Maintaining field notes and journals
- Maintaining systematic observational recordings and logs
- Routinely videotaping participating children (once or twice per week)
- Collecting of all referential documents
- Documenting data sources to create an audit trail
- Peer debriefing and constant reflection on the data
- Category building from segments of the data using constant comparison and domain analyses to determine patterns, contrasts, and overarching themes
- Establishing consistency of data units by consensus review and consistency of category definitions
- Triangulating multiple data sources
- Employing thick description to portray qualitative results
- Conducting membership check meetings to validate documents

Table 5. Primary categories and subcategories: *HyperCard*® data base

Concerns (Expressed):
- Anecdotes related
- Funding
- Initial
- Length
- Logistics
- Parent involvement
- Procedures
- Program
- Relationship
- Replication
- Transition

Facilitating:
- Anecdotes
- Coordination tips
- Facilitator training
- Parent responsibilities
- Start-up procedures
- Teacher training
- Strategies: instruction
- Strategies: interactions

Maintaining:
- Facilitator role factors
- Logistics
- Markers for acceptance
- Meeting needs
- Program collaboration
- System for parent info.

Personnel:
- Administrator
- Assistant
- Coordinator
- Facilitator
- Haworth
- Parent
- Raintree

Parents:
- Anecdotes offered
- Expand integration
- Facilitator needed
- Family identified needs
- Full day issues
- Funding constraints
- Importance of early integration
- Increased education
- Information dissemination
- Involvement in decisions
- Logistical issues
- Meetings
- Parents of typical children
- Personal adjustment
- Program concerns
- Involvement
- Teaching empathy
- Role in mainstream program

Benefits (To/About):
- Anecdotes related
- Classroom assistants
- Future impact
- Children without disabilities
- Parents of nondisabled
- Parents of disabled
- Children with severe disabilities
- Mainstream teacher
- Societal change/acceptance
- School age policy
- Social policy
- Understanding individual differences

Montessori:
- Anecdotes related
- Concerns for integration
- Conducive to integration

Manual:
- Special education techniques
- Procedures for integration
- General information
- Format
- Development
- Techniques for integration

Anecdotes:
- CA
- Changing role
- CS
- SD
- GM
- JF
- MA
- Montessori
- Children without disabilities
- Parent view

Table 6. Evaluation of the model: Fall 1986 through fall 1991

Outcome markers identified by participants as evidence of the program's development and success:

- Shift from participation in the program of one teacher or Montessori director with a special interest in children with disabilities to ongoing involvement of other head teachers—including 5 teachers so far. *(Provides evidence of overall acceptance of the program and expansion of the program.)*
- Mainstream teacher appointed to officially serve as the program's Assistant Director for Special Education; and mainstream program director joins advisory board for early childhood special education programs in the community. *(Provides evidence of program recognition of integral program role of integration and the required management activities.)*
- Listing of special education as a program service in the National American Montessori Teachers' Association International Directory. *(Indicates willingness to be publicly identified with an inclusion program.)*
- Mainstream program administrators invest funds to increase accessibility of the preschool facility. Aesthetic entrance ramp built; elevated sandboxes and garden plots built to accommodate children in wheelchairs' inclusion in sandplay and gardening activities. *(Major fiscal expenditure and structural changes to building and playground suggest significant commitment to the program and sensitivity to enhancing inclusion beyond required standards.)*
- Pictures of children with disabilities involved in activities placed on bulletin board posted in mainstream program entry area along with pictures of typically developing children. *(Without bringing attention to the children's disabilities or making a special announcement of their presence in the program, the use of a regular program strategy, i.e., pictures on the bulletin board, provides evidence to all involved families and staff of the presence and acceptance of the children, their equal status and involvement in the same activities as typical children.)*
- Content in mainstream parent newsletter about individual children or special education staff: listing Facilitators with other new program staff at the beginning of the year; reporting an amusing story about one of the children with disabilities along with other child anecdotes that parents are likely to enjoy; comments such as "we have added a ramp for persons using wheels". *(Indicates that mainstream program staff view the children with disabilities and the integration staff as part of the program.)*
- Ongoing availability of release time for mainstream staff to participate in inservice and conference presentations. *(Suggests willingness to be publicly identified with the program and commitment to sharing information and encouraging others to try inclusive early childhood education.)*
- Established mechanisms for mainstream and special education staff to share information about children, discuss approaches, solve problems, and set policy. *(Mainstream and special education staff participate in ongoing professional interactions via routine meetings, generally biweekly, and via program visitations and shared videotapes of children.)*
- Parent night for the families of children with disabilities conducted in mainstream setting by early educators and special educators in order to address parents' specific concerns and questions. Primary response to individual parents' questions handled by mainstream teacher for the classroom the child will join. *(The availability of this orientation in addition to the general family orientation suggests a recognition on the part of the mainstream staff of the potential concerns of families of children with disabilities and sensitivity and willingness to address these concerns. Also offers evidence of cooperation between staffs.)*
- Mainstream staff participation in routine staff training of new Facilitators. *(Interest in delineating training needs, planning training strategies and conducting training suggests investment in program content and a sense of joint ownership of model.)*
- Invited inservice and consultation provided for mainstream staff by related service staff. *(Mainstream staff's request for information about specific children indicates awareness of need for special techniques and a willingness to learn about and employ recommended procedures.)*
- Mainstream staff assumes the primary role for orienting and handling individuals requesting to observe the program. Considerable interest in the program has resulted in frequent requests to visit and observe. *(Willingness to respond to this interest and present the model to visitors suggests willingness to be publicly identified with the program and commitment to sharing information and encouraging others to try inclusive early childhood education.)*
- Mainstream staff identify equipment and materials specifically to enhance participation and positioning of children with disabilities. *(Awareness suggests attention to the specific needs of children and increasing understanding of characteristics and needs of children with disabilities.)*
- Participation time for children with disabilities in the mainstream program is increased to correspond to the times and types of participation available to typically developing children. Shift for all children from attendance for 2 half-day preschool sessions per week to attendance for the full week of half-day preschool sessions. Beginning in September 1990, some of the children also participate in the child-care portion of the program, such as lunch, early a.m. and late p.m. program. Shift completely out of special education preschool setting to attend mainstream program exclusively for all children for summer session and for one child during entire school year. *(Increase in time for the children's schedules has multiple results: same program schedule eliminates the obtrusiveness of different schedules; increase in time suggests increasing confidence in and commitment to the program feasibility and recognition of the benefits on the part of the mainstream and special education staff and families of the children.)*
- Joint effort on the part of special education and mainstream staff and families to plan and produce 3 videotapes depicting the rationale and initial issues and concerns of the participants as well as the salient strategies for facilitating the meaningful inclusion of the children. *(Effort involves coming to consensus on what key issues to present and which salient features to describe of the program. Required using a membership check process (Lincoln & Guba, 1985) to review and validate script-based data collected via ethnographic investigation.)*
- Joint effort between mainstream and early childhood special education teachers to advocate for a child's placement in an inclusive kindergarten setting when child transitions to another district. Coordination of effort and sense of unity is considerable when representing child prior to and at IEP conferences. *(A "coming together" to advocate for a child and represent the project values seemed to be the pivotal factor in enhancing relationships between staff from the two programs.)*

Table 7. Initial concerns of participants

Participant	Concern
Parents of children with disabilities	Child's adjustment Acceptance of child by mainstream staff and typical children Adequacy of environmental adaptations Appropriateness of environment Child's safety
Parents of typically developing children	Potential loss of needed teacher attention for their child Potential concern that there would be too many children with disabilities in one classroom, affecting the nature of activities and interactions in the setting Could make the classroom seem more crowded and response to access needs could affect freedom of movement
Special Education staff	Accessibility without intrusiveness Communication between programs Logistics and liability factors Acceptance of children by mainstream staff and typical children How to implement effective integration strategies Potential problems with the adjustment of children with disabilities and their parents
Montessori staff	Effect on the program of an untrained, additional adult (Integration Facilitator) in the classroom Accessibility of the setting Communication between programs Meeting licensing requirements Financial feasibility of the program Fear of handling children with disabilities Level of comfort of children with disabilities and their parents Potential problems with parental adjustment to the mainstream setting

Table 8. Identified benefits

Recipient of the Benefits	Benefits
Community/society	Increasing public awareness and education Increasing public acceptance Positively impacting on attitudes about mainstreaming and community integration policy
Typical children	Preparing for future encounters with disability in one's life Increasing acceptance of individual differences Becoming comfortable with people who have disabilities Having an opportunity to help someone Developing desirable personal qualities
Children with disabilities	Expanding circle of friends Increasing access to normal life routines and activities Increasing resources from program combination Improving communication and socialization environments Enhancing opportunities for generalization across settings, materials and persons Availability of full-day child care

Table 9. Split program impact on participants

Parents

Parents are asked to respond to two sets of procedures, paperwork, staff, calendars and schedules; and they must fulfill two sets of parental roles defined by both mainstream and special education programs.

Children with disabilities

Children with disabilities are asked to respond to different settings, routines, rules and staff within a single day as well as to the very different level and types of adaptation and support offered in each setting. The level of bonding and friendships between children with disabilities and typical peers may be affected by time in setting. May facilitate generalization.

Staff

Staff have increased demands for ongoing communication, which are impacted by the different settings, schedules, diverse perspectives, philosophies and training. Problems with program competition can occur. Special accommodations are required to adjust to schedule mismatches for students.

Table 10. Potential problems in matching parents' needs with mainstream Montessori program: Variables that must be addressed in planning and conducting integration program

Source of Variable	Key Variables
Needs indicated by parents	Need to feel included in the full range of program activities Need to feel adequately informed about activities and child progress Need to have "adequate" teacher contacts Need to be consulted about child's program
Mainstream program variables impacting on parental needs	Larger student-to-staff ratios affect time per family Less staff time allocated for planning and conferring with parents No formal Individualized Educational Planning strategies Montessori philosophy views classroom as a child's world, involvement of parents not as emphasized as in typical special education early intervention programs

Comment: One of the interesting results of the data is the adjustment to the mainstream program required of parents who are used to dealing with special education programs. Essentially, parents want to be like all the other parents, and yet they feel a considerable need to be given more attention and information than the parents of typically developing children generally receive. Given the staff situations in most mainstream programs, this is a challenging issue which needs to be addressed by models involving integrated preschool and child care services for children with severe disabilities.

Table 11. Characteristics of children with severe and profound multiple disabilities and related accommodation and planning requirements

---

Significant Child Characteristics

- Significant discrepancy between chronological age and development
- Non-ambulatory
- Limited trunk and head control
- Presence of primitive reflexes and abnormal tone
- Nonverbal communication
- Self-stimulatory behavior
- Drooling
- Limited eye contact
- Limited display of affect
- Range of medical conditions

Special Planning and Accommodation Requirements

- Including adaptive equipment in the setting
- Implementing handling and positioning strategies
- Providing an accessible environment
- Employing methods to normalize participation
- Employing special mealtime procedures
- Employing special bathroom procedures
- Employing needed health-care procedures
- Utilizing alternative communication systems
- Recognizing nonverbal communication
- Providing necessary staff support
- Introducing the child to typical peers
- Responding to questions from typical students
- Responding to questions from parents of typical students

Table 12. Variables related to Montessori approach

Variable One: Preconceived notions about Montessori programs

- "inadequate social and language skills"
- "fails to include certain activities"
- (dramatic play)
- "dull, monotone materials"
- "interferes with adjustment to other programs"
- "lacks flexibility"
- "too academic"
- "non-nurturing"

Variable Two: Participants viewed Raintree Montessori as an excellent program

- easy to individualize
- acceptance and respect of staff for the children
- overall high-quality program
- high frequency of opportunities for social interaction
- exceptionally competent and caring administration and staff

Variable Three: Participants identified features of the Montessori approach that were related to the success of the program

- cross-age grouping
- individualization and independence
- respect for child and focus on capabilities
- quality and nature of the materials
- opportunities for choice
- encouragement of helping

Table 13

Child Demographic Data

	Child 1 (CA)	Child 2 (JF)	Child 3 (SD)
Age	4;1	4;6	5;0
Gender	M	M	F
Diagnosis	Cerebral Palsy	Cerebral Palsy	Developmental Delay
Developmental Level in Months			
Cognition	6-9 *	6-9 *	11 **
Social	9-15 *	9 *	11 **
Motor	6 *	6 *	15 *
Language			
Receptive ‡	9-10	10-11	8-9
Expressive ‡	4-6	8-9	8-9

Table Notes

* Carolina Curriculum for Handicapped Infants (1989)
** Early Learning Accomplishment Profile (1978)
*** Early Learning Milestone Scale
‡ Receptive Expressive Emergent Language Scale (1971)

Table 14

Communication and Interaction Variables

Child Profile

- number of initiations
- number of different modes used
- type of modes used
- number of participatory turns
- participatory turns per minute

Partner Profile

- number of initiations
- number of redirections
- number of different modes used
- types of modes used
- number of participatory turns
- number of participatory turns per minute
- MLU in words

Interactions

- number of different partners
- number of adult partners
- number of child partners
- total number of interactions
- total number of interactions with subject
- number of helping interactions
- number of teaching interactions
- number of social interactions

Table 15

Grand Means and Standard Deviations

	Special Education		Community Preschool	
Child Profile				
initiations	1.92	(1.97)	8.17	(3.40)**
# modes used	2.25	(2.25)	2.66	(.65)
turns	15.58	(8.73)	29.17	(14.76)**
turns per minute	1.04	(.58)	1.94	(1.86)**
Partner Profile				
initiations	22.5	(7.22)	35.25	(12.37)**
redirections	.33	(.65)	3.75	(3.28)*
modes used	2.33	(.49)	2.83	(7.18)
turns	192.17	(53.13)	239.92	(58.56)*
turns per minute	12.93	(3.64)	15.99	(15.06)*
MLU in words	4.76	(.88)	5.17	(.41)
Interactions				
different partners	3.08	(.996)	3.17	(1.27)
adult partners	22.67	(.78)‡‡	1.17	(.39)
child partners	.42	(.51)	2.00	(1.13)‡‡
total interactions	43.25	(10.37)	68.83	(21.28)‡‡
total interactions with subjects	24.75	(8.03)	42.25	(8.00)‡‡
helping	5.83	(4.51)	26.25	(7.51)‡‡
teaching	12.50	(6.71)	6.25	(4.05)‡
social	6.42	(3.15)	9.75	(6.50)

Table Notes

Standard deviations in parentheses.

* means significantly different, $p < .05$, one-tailed t-test
** means significantly different, $p < .01$, one-tailed t-test
‡ means significantly different, $p < .05$, two-tailed t-test
‡‡ means significantly different, $p < .01$, two-tailed t-test

Table 16

Within-Subject Means: Child Profile

	Special Education		Community Preschool	
Child 1 - CA				
initiations	2.75	(2.87)	7.25	(3.77)*
# modes used	1.75	(.50)	2.75	(.50)
turns	14.25	(8.92)	25.50	(13.50)*
turns per minute	.95	(.60)	1.70	(.90)*
Child 2 - JF				
initiations	2.25	(1.71)	6.75	(1.50)*
# modes used	2.75	(.50)	2.25	(.96)
turns	22.00	(8.41)	26.25	(13.81)
turns per minute	1.47	(.55)	1.68	(.92)
Child 3 - SD				
initiations	.75	(.50)	10.50	(3.87)‡
# modes used	2.25	(.50)	3.00	(.00)
turns	10.50	(6.13)	36.75	(17.76)*
turns per minute	.71	(.40)	2.45	(1.17)*

Table Notes

Standard deviations in parentheses.

- * means significantly different, $p < .05$, one-tailed t-test
- ‡ means significantly different, $p < .01$, two-tailed t-test

Table 17

Within-Subject Means: Partner Profile

	Special Education	Community Preschool
Child 1 - CA		
initiations	24.50 (24.00)	43.50 (14.88)
redirections	0	2 (1.82)
modes used	2.25 (.50)	2.50 (.577)
turns	139.00 (53.78)	251.75 (66.34)
turns per minute	9.27 (1.24)	16.78 (4.42)
MLU in words	4.76 (1.24)	5.31 (4.70)
Child 2 - JF		
initiations	26.25 (6.99)	35.00 (11.81)
redirections	.50 (1.00)	4.50 (4.20)
modes used	2.50 (.58)	2.50 (2.58)
turns	232.50 (20.43)	276.50 (42.25)
turns per minute	15.59 (1.05)	18.43 (2.82)
MLU in words	4.87 (.69)	5.27 (.22)
Child 3 - SD		
initiations	16.75 (6.18)	26.75 (3.59)
redirections	.50 (.58)	4.75 (3.59)
modes used	2.25 (.50)	4.75 (3.59)
turns	205.00 (29.74)	191.00 (35.89)
turns per minute	13.93 (2.43)	12.77 (2.39)
MLU in words	5.17 (.54)	4.91 (.63)

Table Note

Standard deviations in parentheses.

Table 18

Within-Subject Means: Interactions

	Special Education	Community Preschool
Child 1 - CA		
total interactions	38.75 96.65)	73.50 (27.08)
total interactions with subject	28.50 (8.06)	47.00 (9.90)
different partners	2.75 (.96)	3.25 (1.89)
adult partners	2.50 (1.00)	1.25 (1.00)
child partners	.25 (.50)	2.00 (.58)
helping	9.50 (5.97)	30.75 (9.18)
teaching	12.50 (7.59)	5.75 (4.03)
social	6.50 (2.08)	10.50 (6.24)
Child 2 - JF		
total interactions	46.25 (10.50)	72.25 (24.51)
total interactions with subject	28.00 (6.38)	42.00 (8.38)
different partners	3.75 (.96)	3.50 (1.29)
adult partners	3.25 (.50)**	1.00 (0)
child partners	.50 (58.00)	2.50 (1.29)
helping	3.00 (1.82)	23.00 (8.40)*
teaching	16.25 (5.38)	6.25 (4.99)*
social	8.75 (4.11)	12.75 (9.17)
Child 3 - SD		
total interactions	4.75 (14.05)	60.75 (13.90)
total interactions with subject	7.75 (5.73)	37.00 (2.98)**
different partners	2.75 (.96)	2.75 (.50)
adult partners	2.25 (.50)	1.25 (.50)
child partners	.50 (.58)	1.50 (.58)
helping	5.00 (2.45)	25.00 (2.94)**
teaching	8.75 (6.39)	6.75 (4.27)
social	4.00 (0)	6.00 (.82)*

Table Notes

Standard deviations in parentheses.

* means significantly different, $p < .05$, two-tailed t-test

** means significantly different, $p < .01$, two-tailed t-test

Table 19

Average Reliability For Each CEVIT Environmental Variable and Subvariable Per Subject and Overall

Code Item	Subjects		Total Average Reliability
	JF	SB	
Adult #	**97.33**	**84.99**	**91.16**
Peer #	**99.33**	**93.49**	**96.41**
Materials	**96.83**	**91.66**	**94.24**
Present (P)	98.16	95.70	96.93
Absent (A)	98.53	95.66	97.09
Indoor Location	**98.83**	**80.66**	**89.74**
Classroom Equipment Area (E)	99.49	93.43	96.46
Classroom Floor Area (F)	99.79	95.04	97.05
Transition (T)	99.79	96.07	97.93
Nondefined Area (N)	99.74	96.08	97.91
Position	**99.66**	**98.49**	**99.07**
Upright (U)	100.00	99.12	99.56
4-Point (4P)	100.00	100.00	100.00
Carried (C)	99.70	100.00	99.85
Seated (S)	99.83	99.24	99.53
Supine (SP)	100.00	100.00	100.00
Prone (P)	100.00	100.00	100.00
Sidelying (SL)	99.95	100.00	99.97
Equipment	**99.66**	**98.16**	**98.91**
Wheelchair (Wc)	100.00	100.00	100.00
Prone Stander (Ps)	100.00	100.00	100.00
Sidelyer (Sl)	100.00	100.00	100.00
Corner Chair (Cc)	100.00	100.00	100.00
Tumbleform (T)	99.95	100.00	99.97
Wedge (We)	99.87	100.00	99.93
Walker (Wk)	100.00	100.00	100.00
Pillow (P)	100.00	100.00	100.00
Standard Chair (Sc)	100.00	99.41	99.70
Human Support (H)	99.91	99.87	99.89
No Support (/)	99.91	98.70	99.30

Table 20

Interobserver reliability measures of CEVIT interaction variables across subjects

Interaction Variables	Interobserver Reliability
Adult	
Overall	86.53%
Direct	91.21%
Nondirect*	70.59%
Contact	86.54%
Direct Interpret**	33.33%
Nondirect Interpret**	50.00%
Redirect	100.00%
No Occurrence (in interval)	88.16%
Subject	
Overall	83.50%
Vocalizations*	78.00%
Crying [a]	—
Gaze*	59.52%
Contact	100.00%
Stereotypy [b]	—
Independent Sign	50.00%
Assisted Sign	81.29%
Device	87.67%
No Occurrence (in interval)	90.34%
Peers	
Overall	94.71%
Direct	80.00%
Non-direct*	71.43%
Direct Interprets**	100.00%
Nondirect Interpret**	—
Contact	100.00%
Redirect [c]	—
No Occurrence (in interval)	96.86%

Table Notes

Reliability measures are based on several rounds of reliability analyses

* (by variable) Indicates revision of definition has occurred and reliability analysis is currently underway or completed

** Variable will be dropped from interval coding (CEVIT) analysis and will be assessed from content statements in transcript analysis

[a] Crying has not been observed at an adequate rate to measure reliability

[b] Stereotypy was recently added because of addition of a new subject, and reliability has not yet been established

[c] Redirect has not been observed at an adequate rate to measure reliability

Table 21. Interobserver Reliability Analyses for the CEVIT Interaction Variables

Category/Variable	Jacob Original Definition[a]	Jacob Revised Definition[b]	Shannon Original Definition[a]
Adult variable			
Adult Interaction			
Method 1	95%		96%
Method 2	75%	92%	76%
Direct Verbalization			
Method 1	92%		92%
Method 2	86%	96%	82%
Non-direct Verbalization			
Method 1	94%		98%
Method 2	58%	84%	55%
Interpret			
Method 1	93%		99%
Method 2	13%	M	13%
Speak for Subject			
Method 1	99%		98%
Method 2	18%	M	17%
Contact			
Method 1	91%		91%
Method 2	66%	96%	73%
Redirect			
Method 1	99%		100%
Method 2	17%	50%	33%
Sign			
Method 2		74%[c]	
Subject variable			
Subject Interaction			
Method 1	98%		98%
Method 2	81%	91%	80%
Vocalizations			
Method 1	91%		93%
Method 2	75%	88%	73%
Crying			
Method 1	100%		100%
Method 2	N	N	N
Laughing			
Method 1	99%		100%
Method 2	60%	M	N
Gaze			
Method 1	97%		N/A
Method 2	60%	86%	N/A
Sign			
Method 1	99%/100%[d]	95%/99%	
Method 2	65%/50%	60%	20%/0%
Device			
Method 1	100%/100%		98%/99%
Method 2	100%/N	80%	25%/50%

table continues on next page

Table 21. Interobserver Reliability Analyses for the CEVIT Interaction Variables, ***continued***

Category/Variable	Jacob		Shannon
	Original Definition[a]	Revised Definition[b]	Original Definition[a]
Peer variable			
Peer Interaction			
Method 1	96%		96%
Method 2	72%	94%	68%
Direct verbalization			
Method 1	93%		88%
Method 2	75%	90%	67%
Non-direct verbalization			
Method 1	90%		94%
Method 2	35%	79%	42%
Interpret			
Method 1	97%		99%
Method 2	0%	M	0%
Speak for Subject			
Method 1	98%		100%
Method 2	18%	M	0%
Contact			
Method 1	97%		93%
Method 2	58%	90%	57%
Redirect			
Method 1	100%		100%
Method 2	0%	N	0%
Sign			
Method 2		78%[c]	

Table Notes

M = Merged with other variables
N/A = Shannon does not use gaze to communicate
N = No occurrences of the variable

[a] Original definition represents a total percent agreement in which reliability is calculated by dividing the agreement of occurrences and non occurrences by the agreements plus disagreements.

[b] Revised definition represents the occurrence agreement method in which reliability is calculated by dividing the agreement of occurrences by the agreements plus disagreements.

[c] A new variable in Version 2.1. of the CEVIT.

[d] The reliability reported for the Sign variable represents both unassisted and assisted signing.

Figure 1. Grand Means: Child Profile

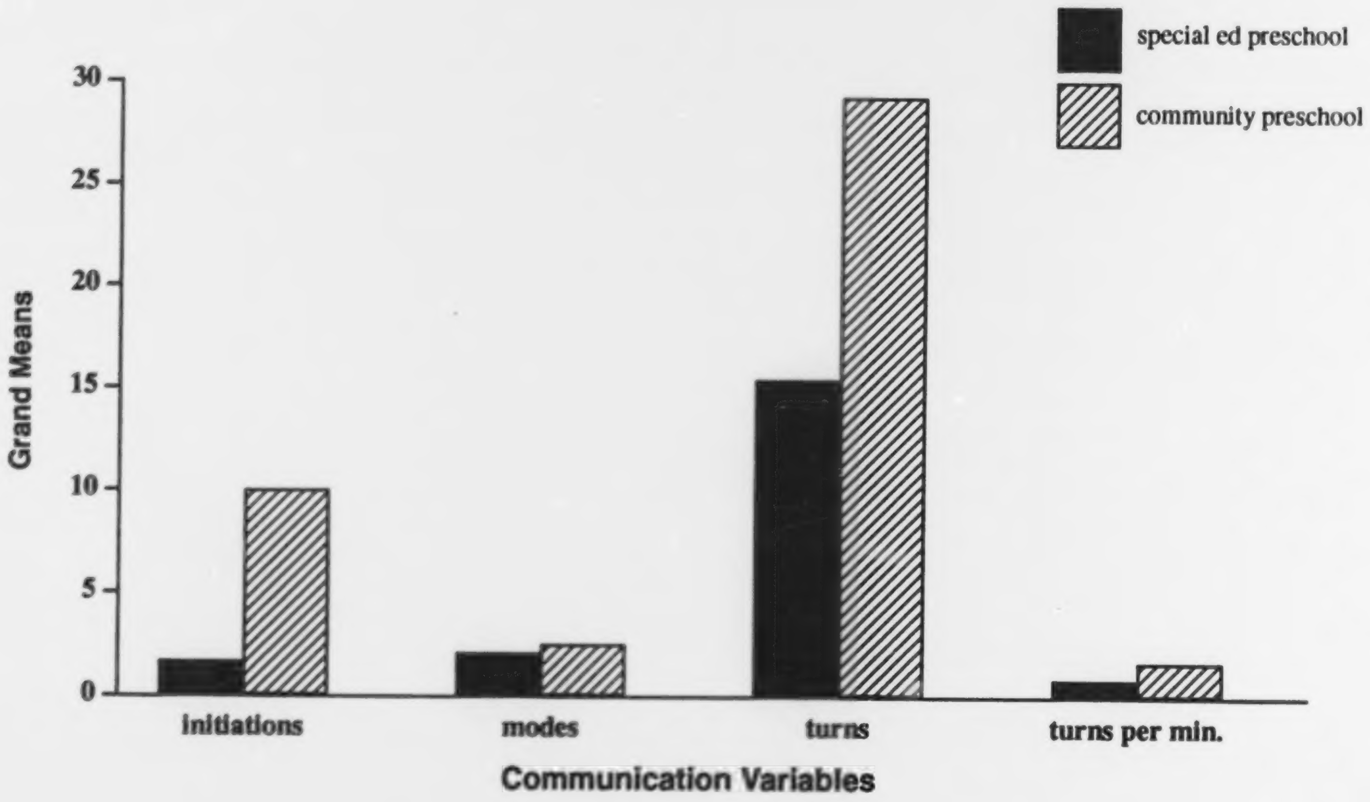
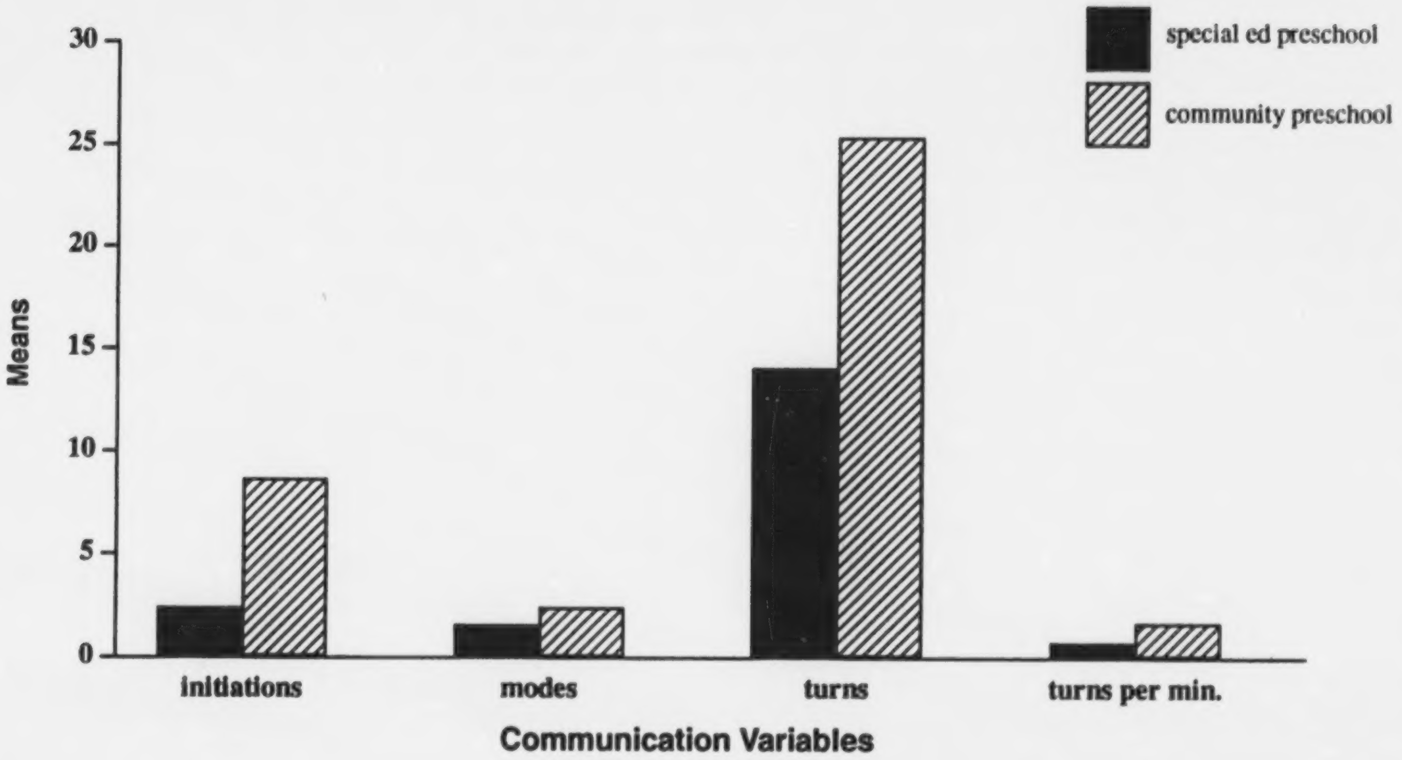


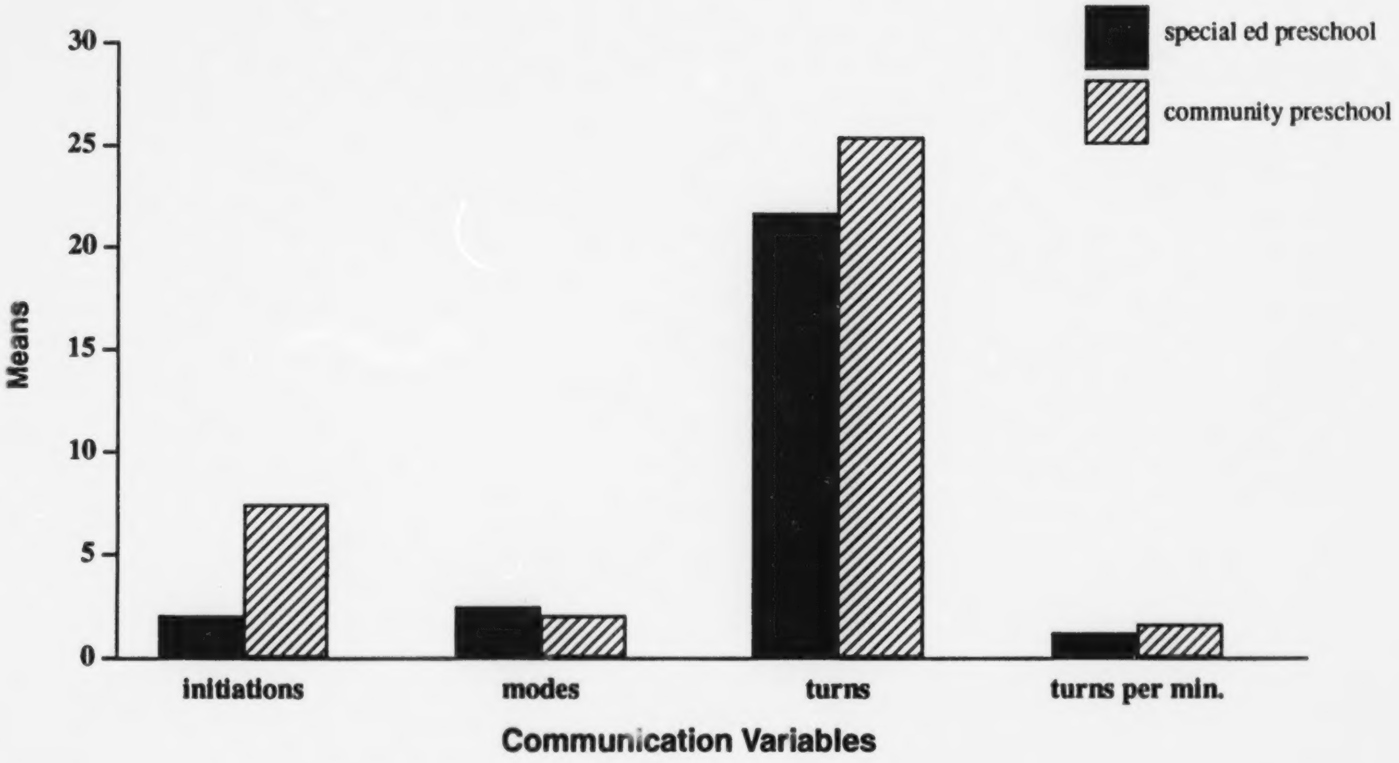
Figure 2. Within-Subject Means: Child 1



114

115

Figure 3. Within-Subject Means: Child 2



116

117

Figure 4. Within-Subject Means: Child 3

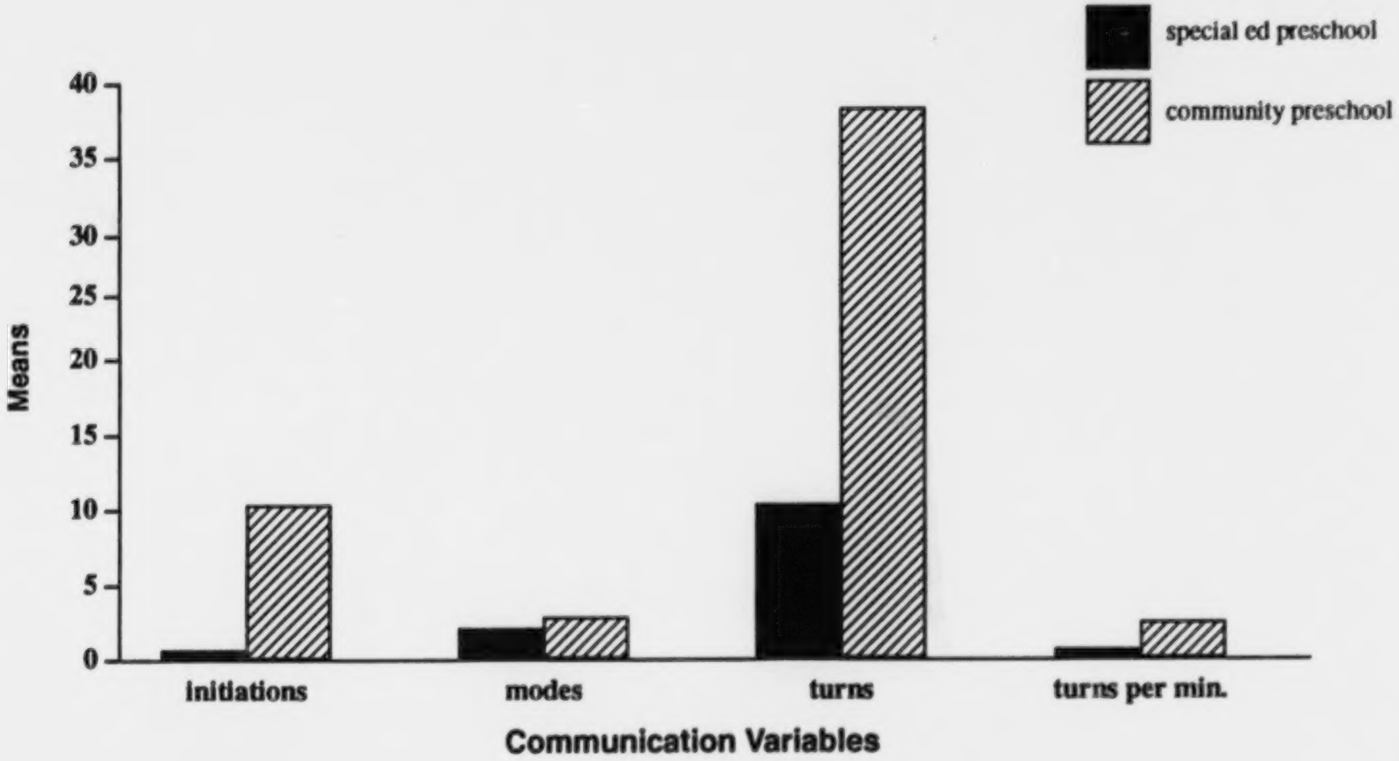


Figure 5. Grand Means: Partner Profile

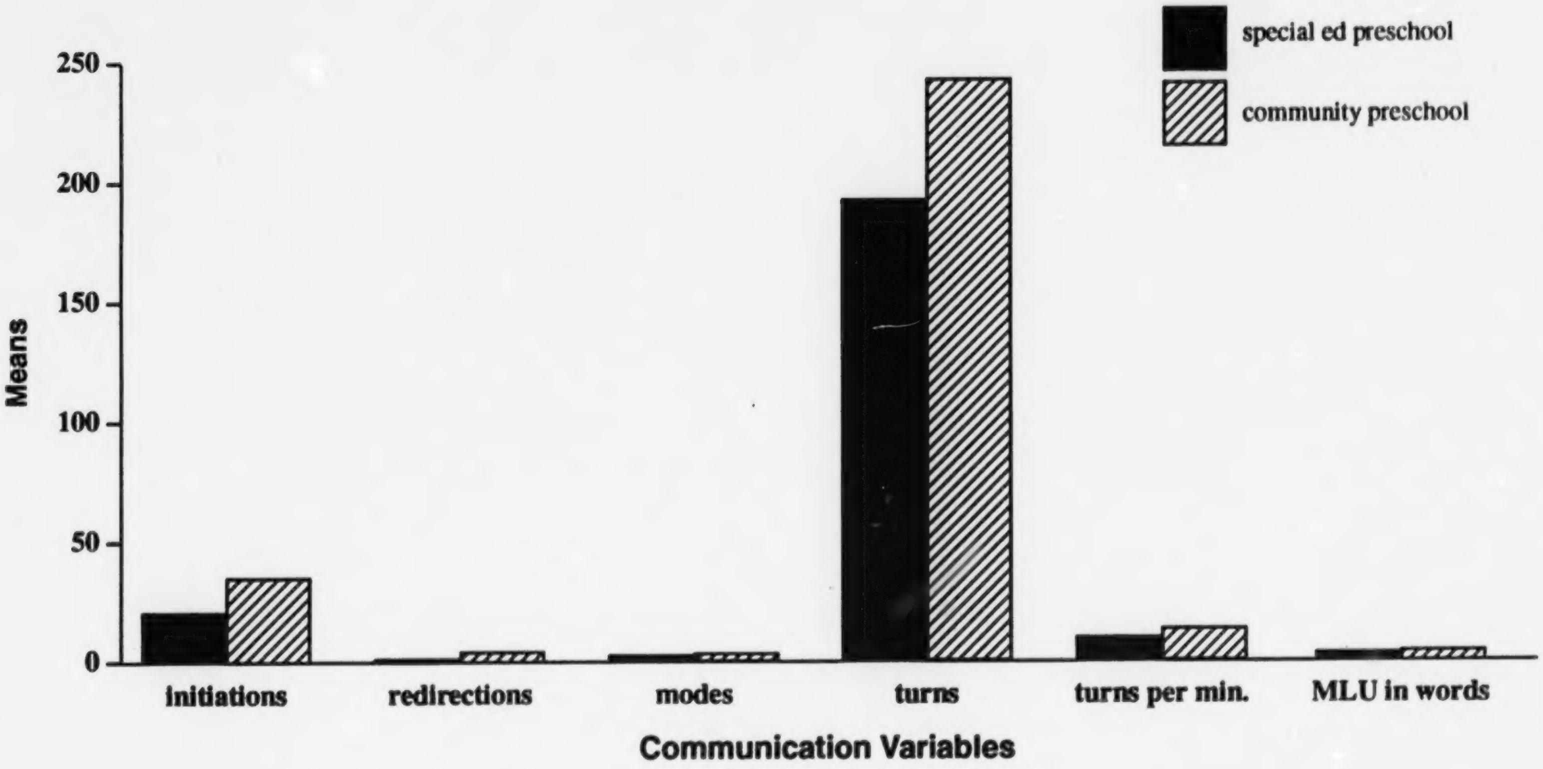


Figure 6. Partner Means Within Subject: Child 1

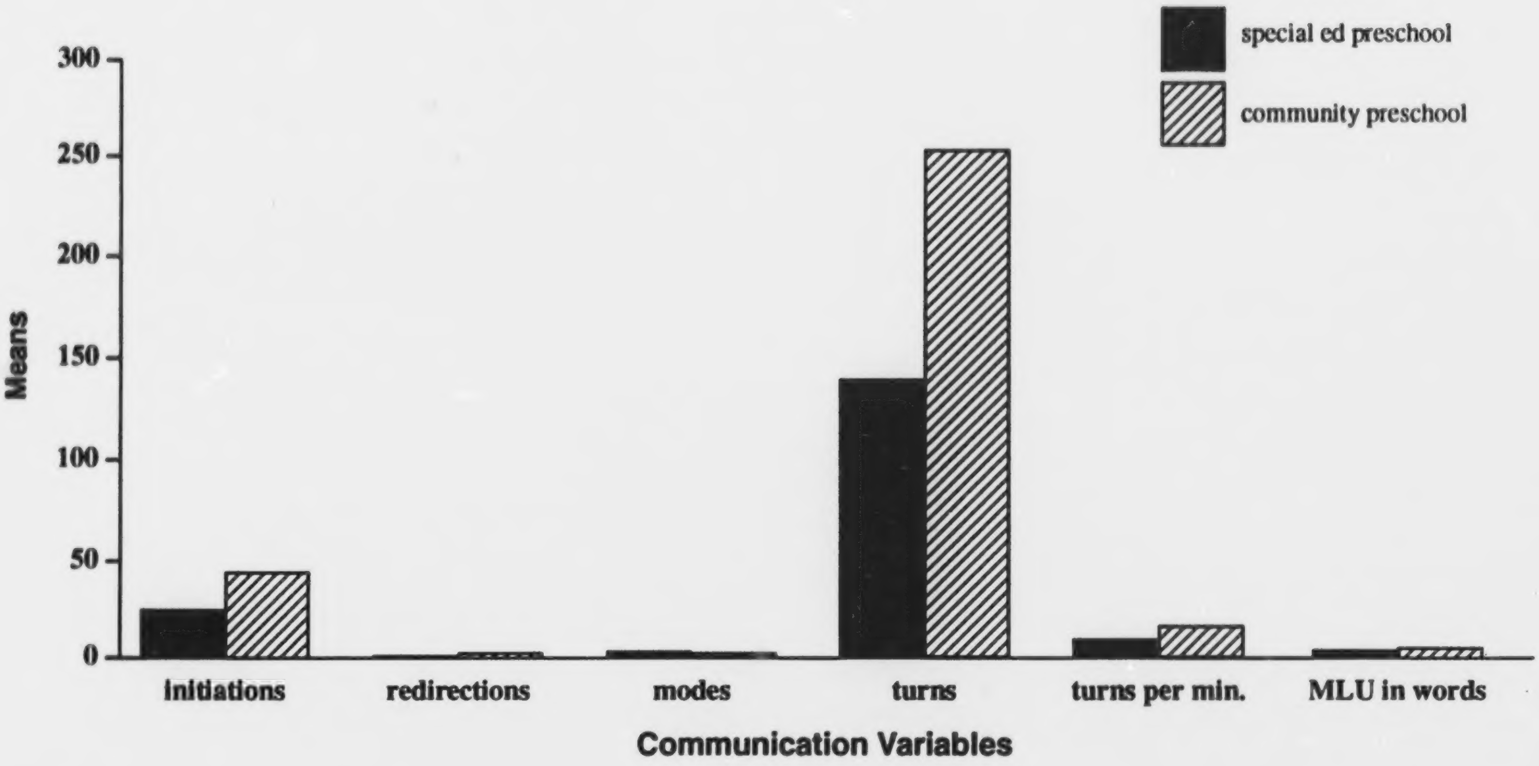


Figure 7. Partner Means Within Subject: Child 2

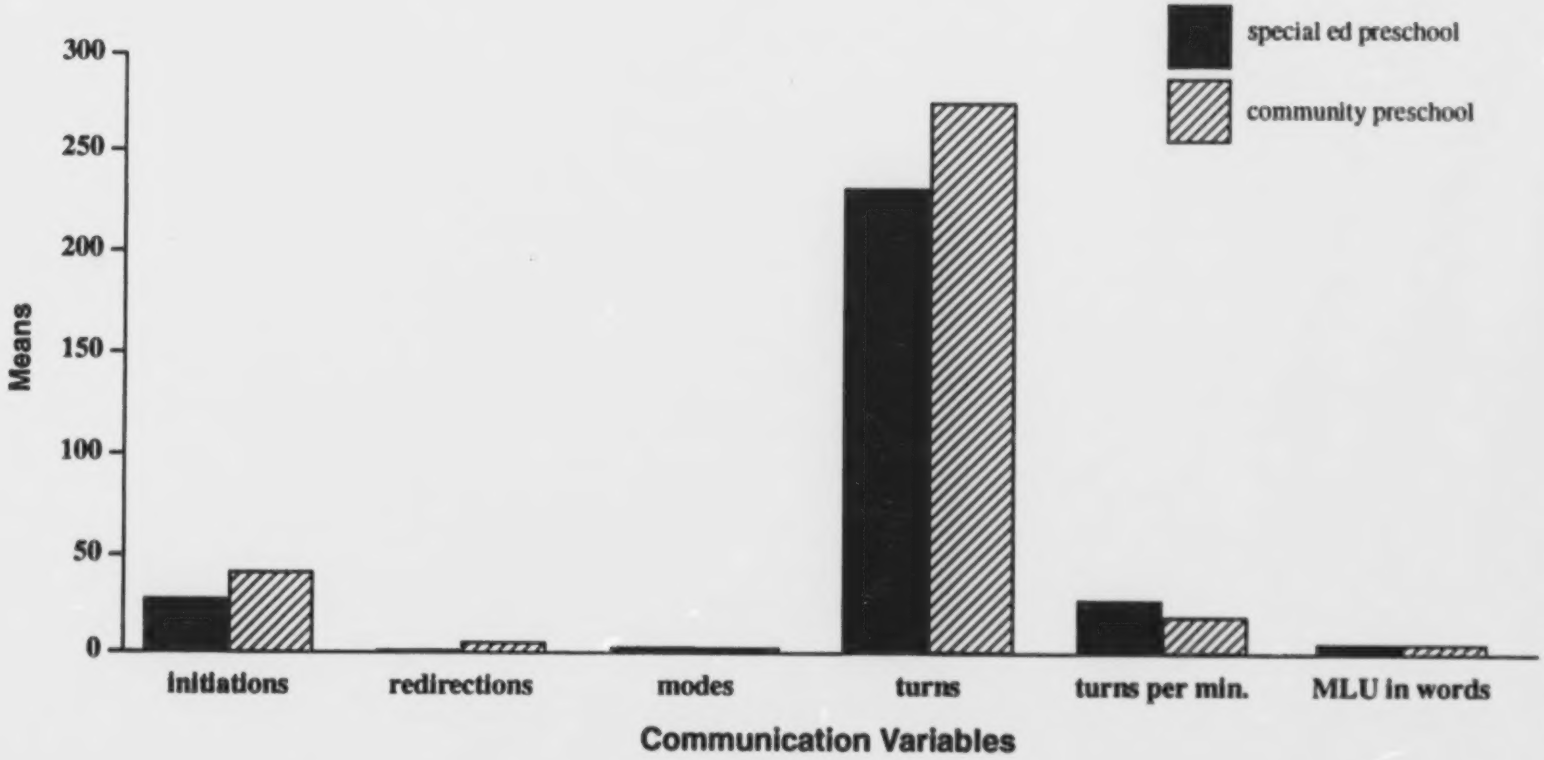


Figure 8. Partner Means Within Subject: Child 3

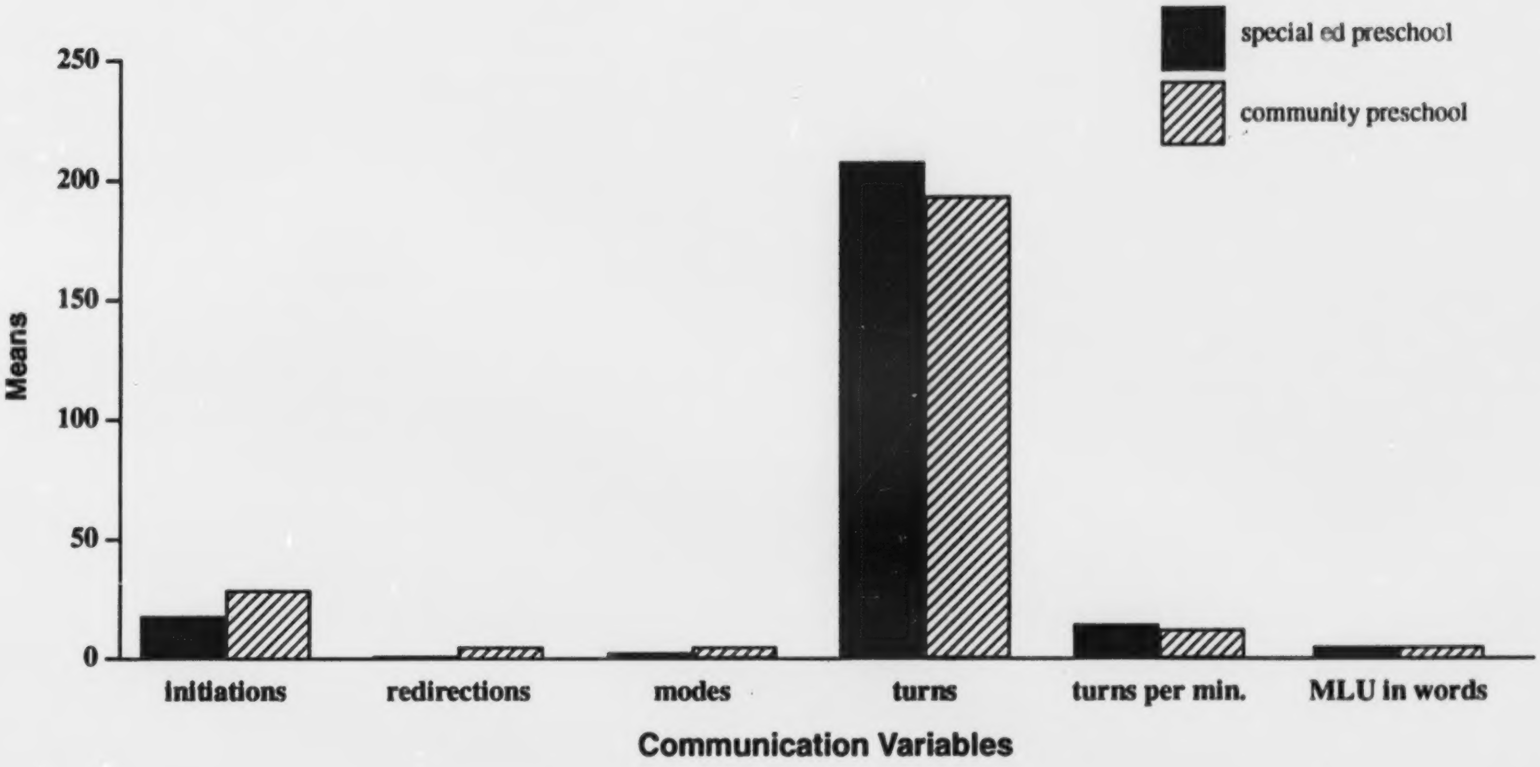


Figure 9. Grand Means: Interactions

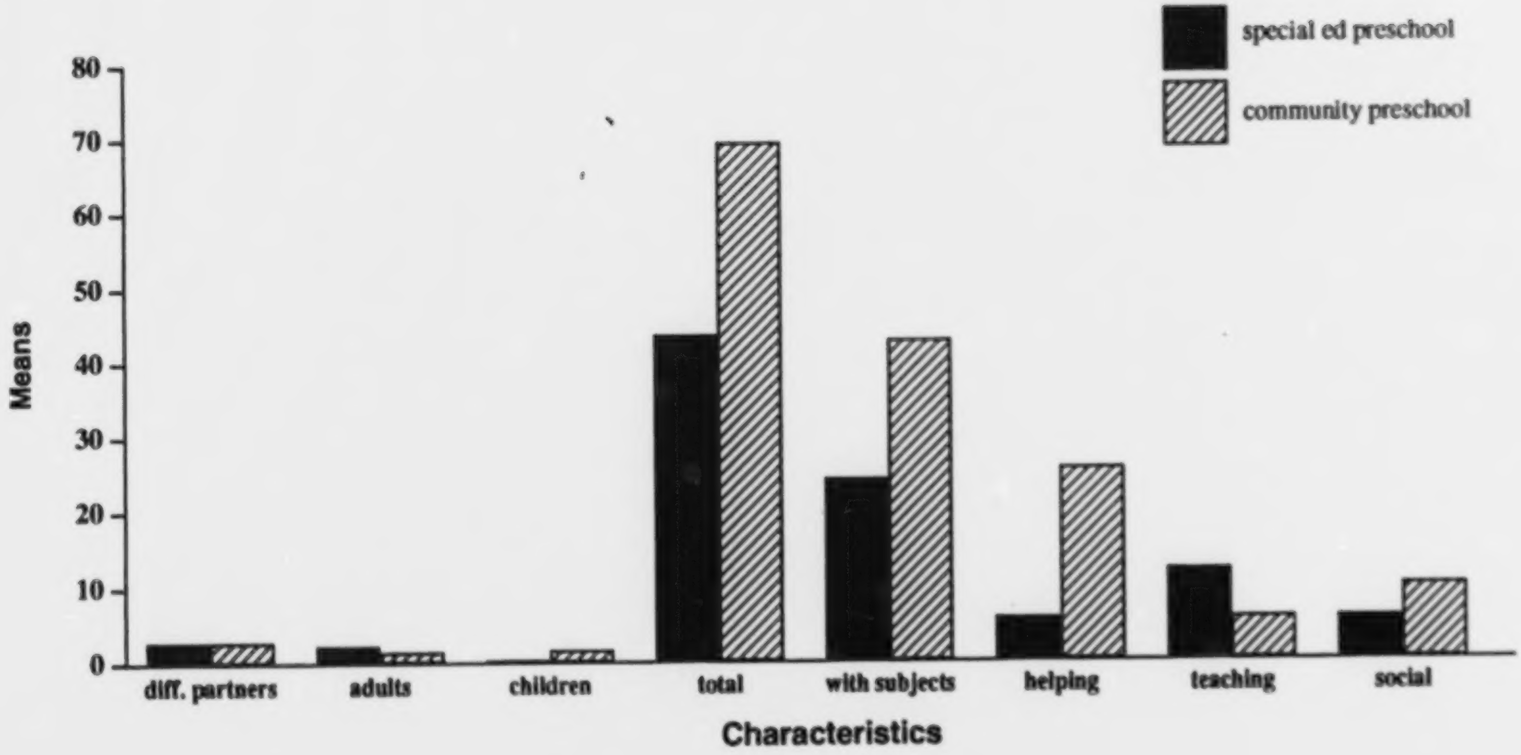


Figure 10. Interactions Within Subject: Child 1

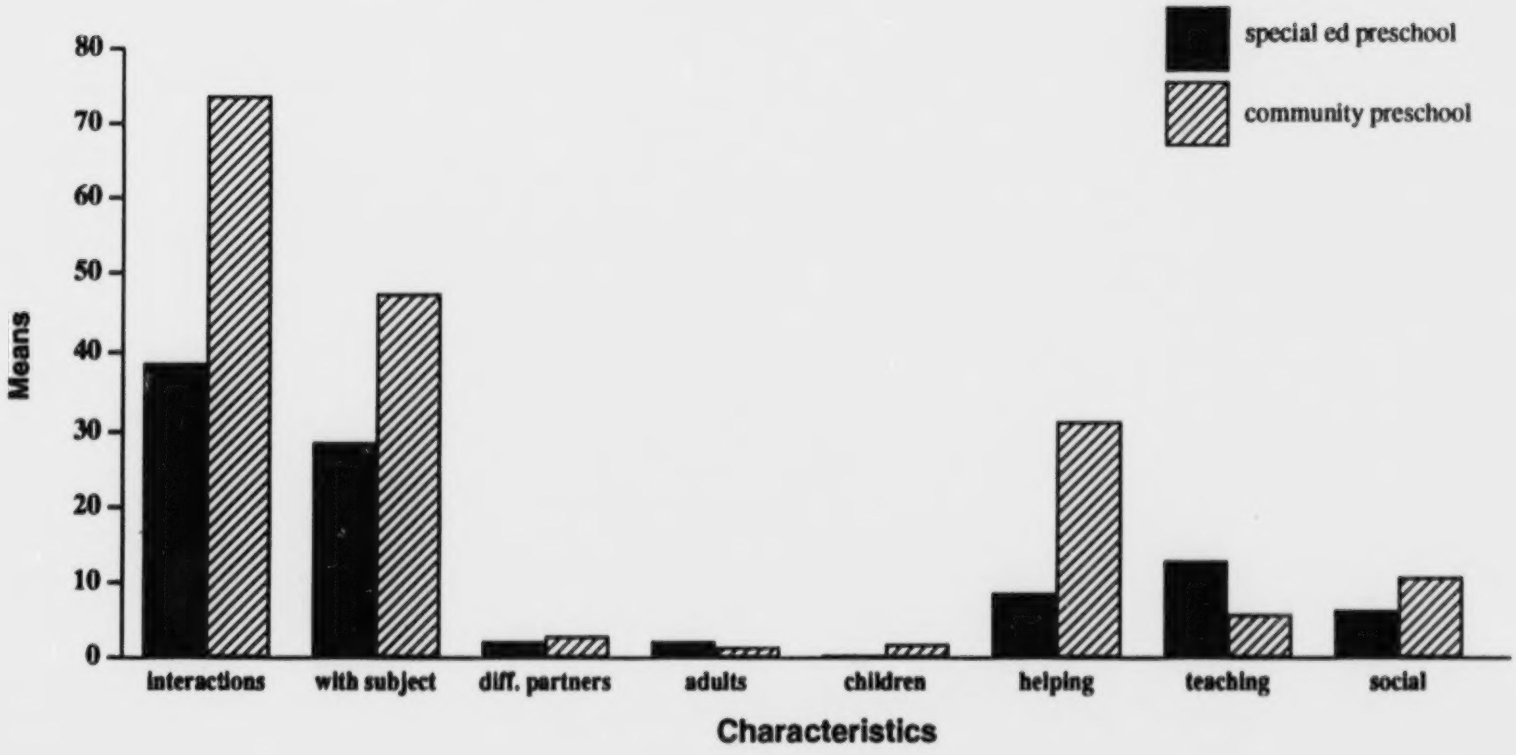


Figure 11. Interactions Within Subject: Child 2

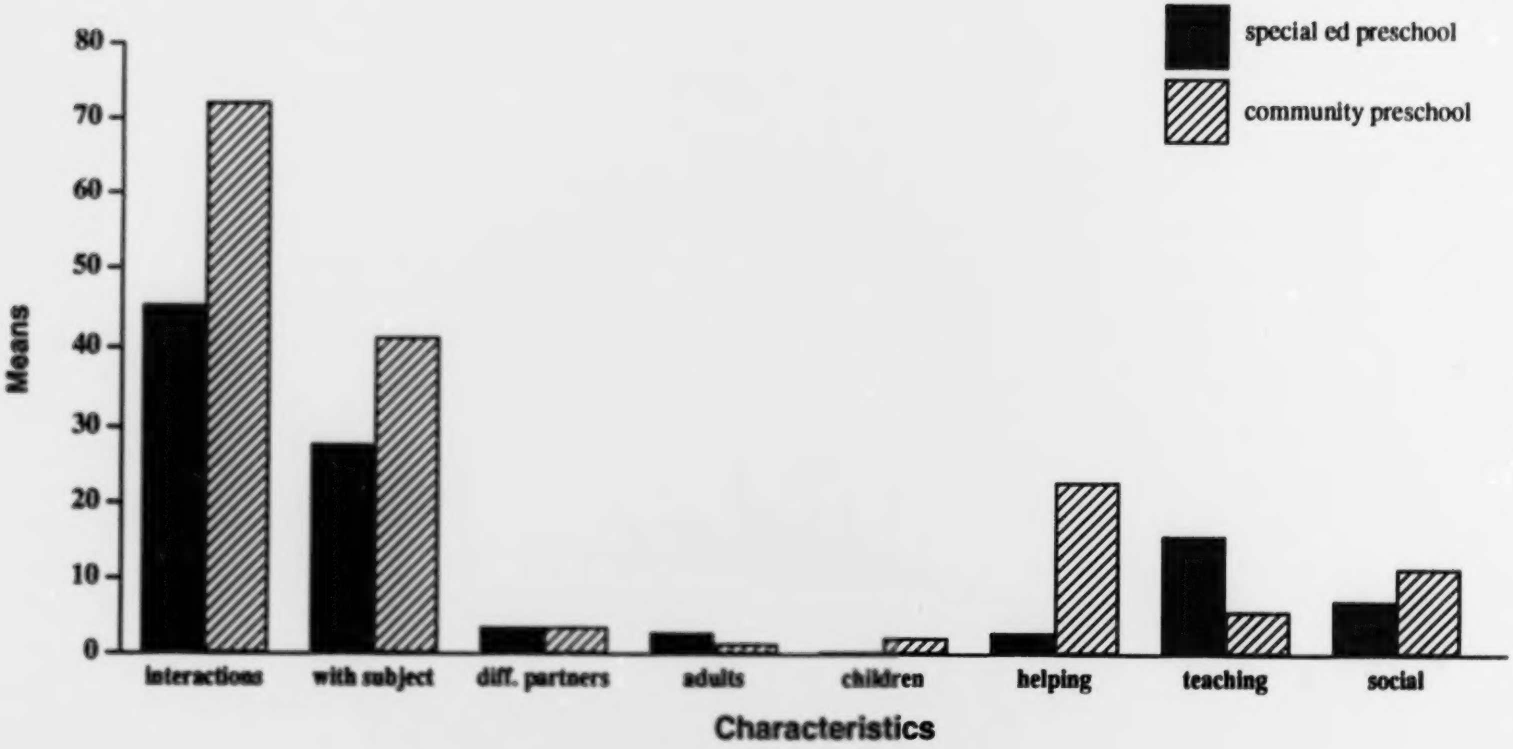


Figure 12. Interactions Within Subject: Child 3

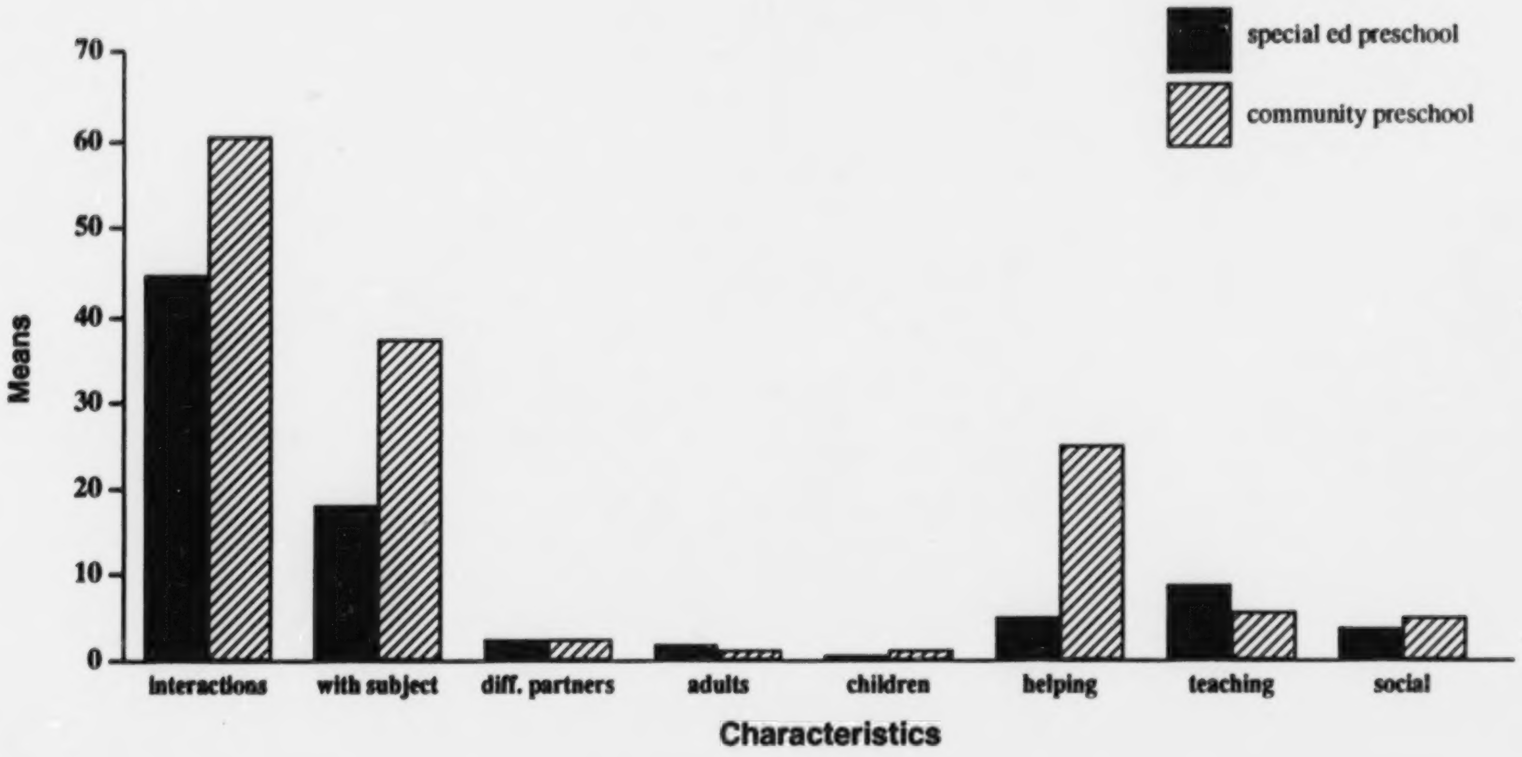
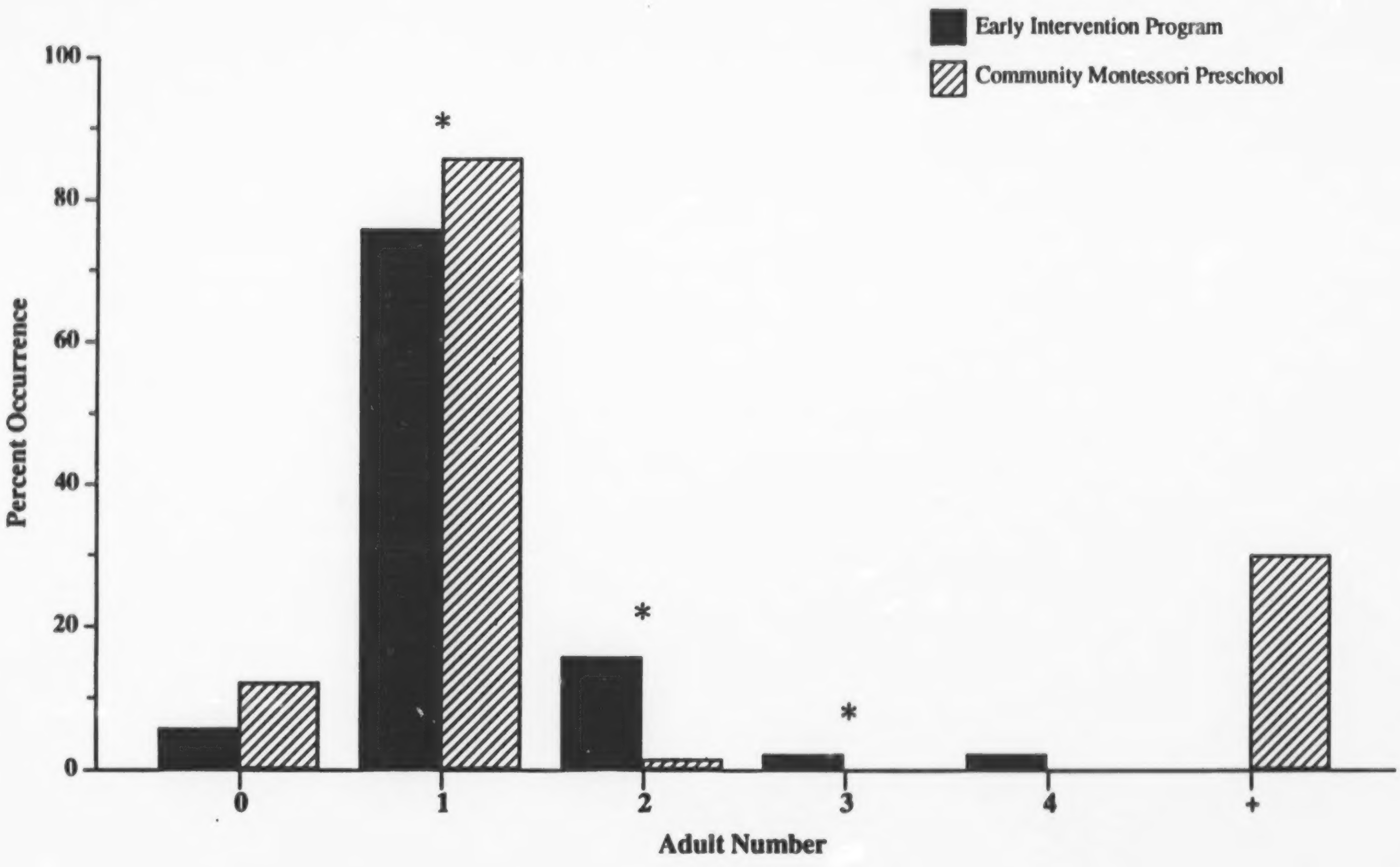


Figure 13. Comparison of percent occurrence of adults across two settings

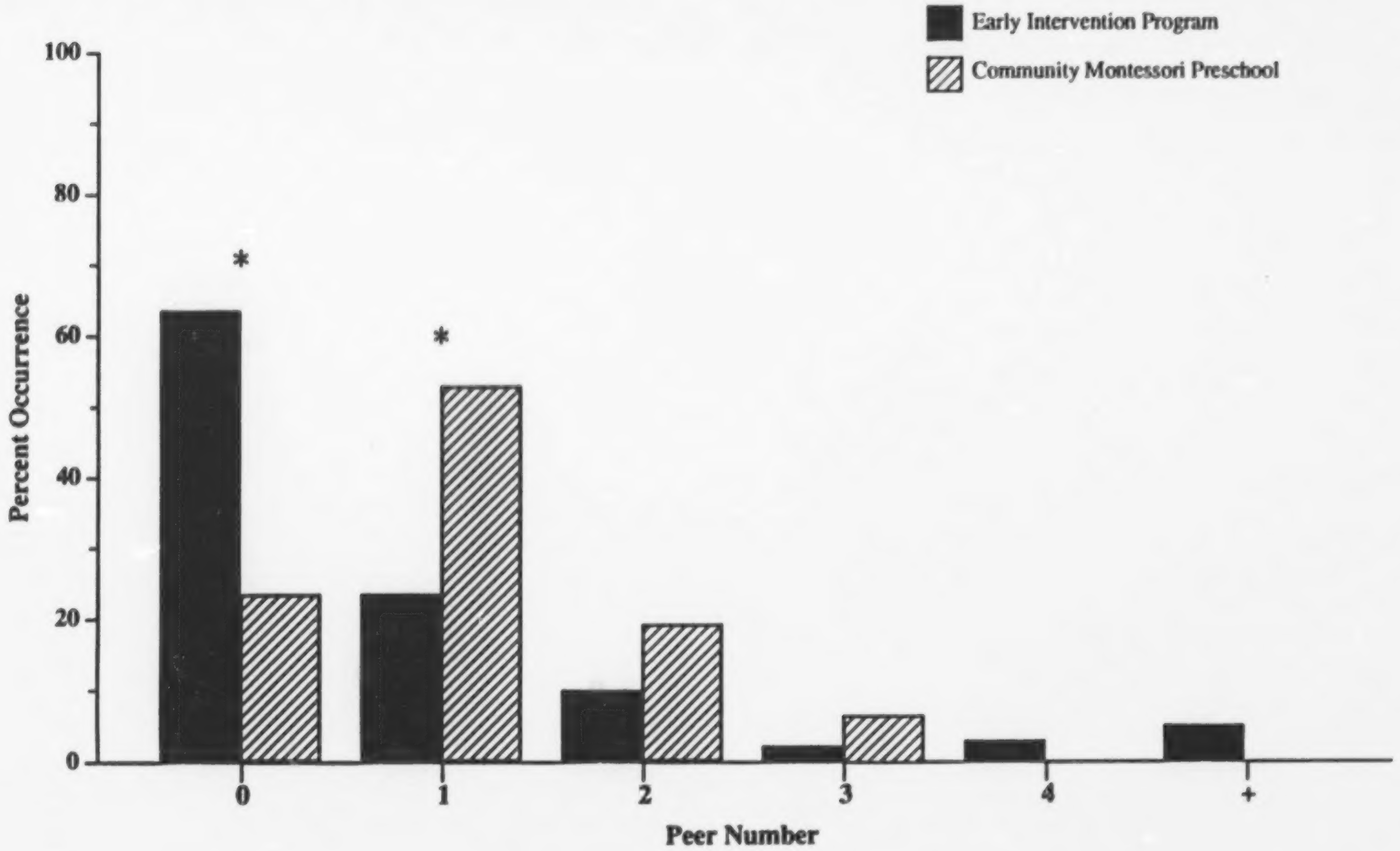


* Stastically significant

137

136

Figure 14. Comparison of percent occurrence of peers across two settings



* Stastically significant

Figure 15. Comparison of percent occurrence of materials variables across two settings

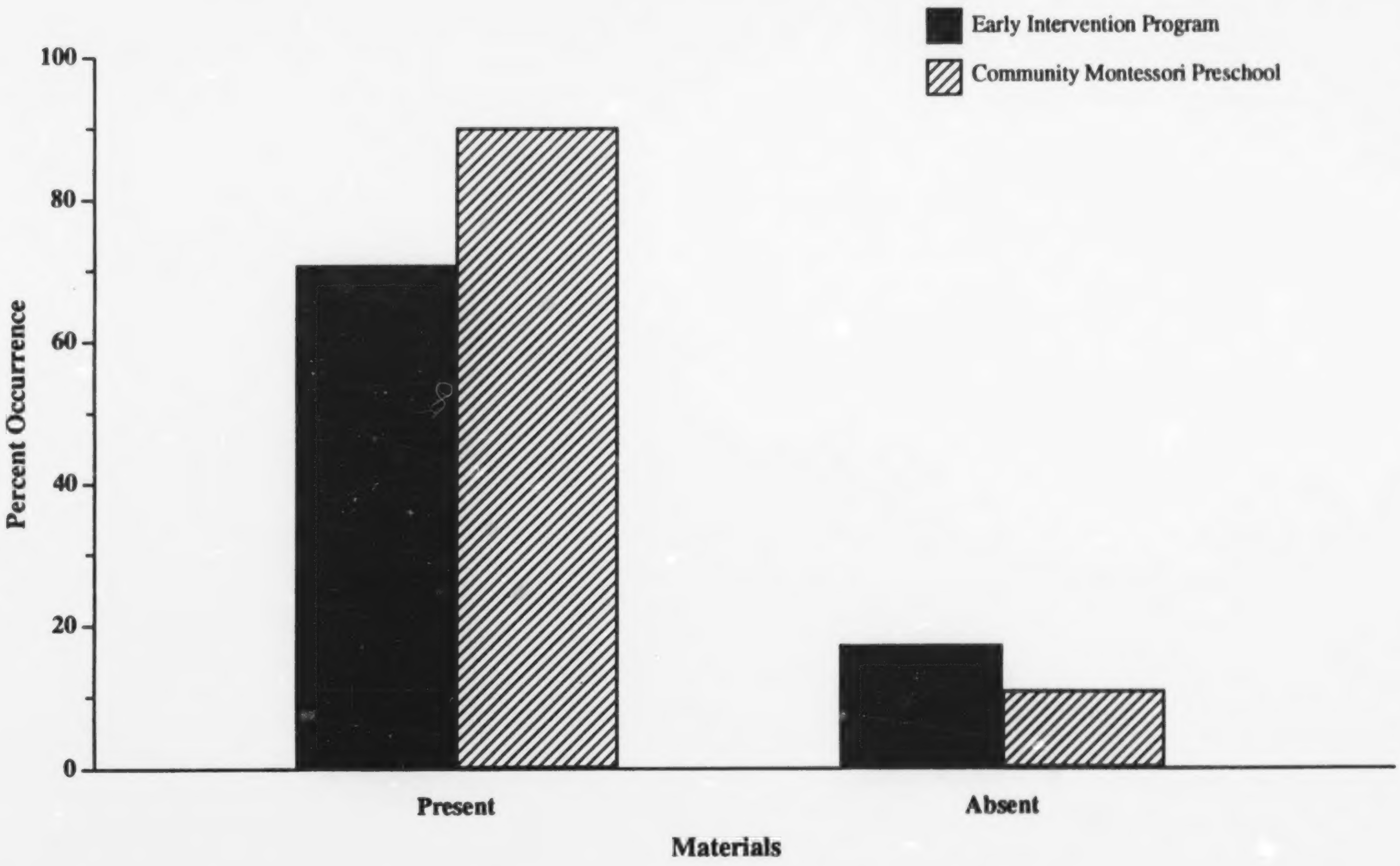


Figure 16. Comparison of percent occurrence of location variables across two settings

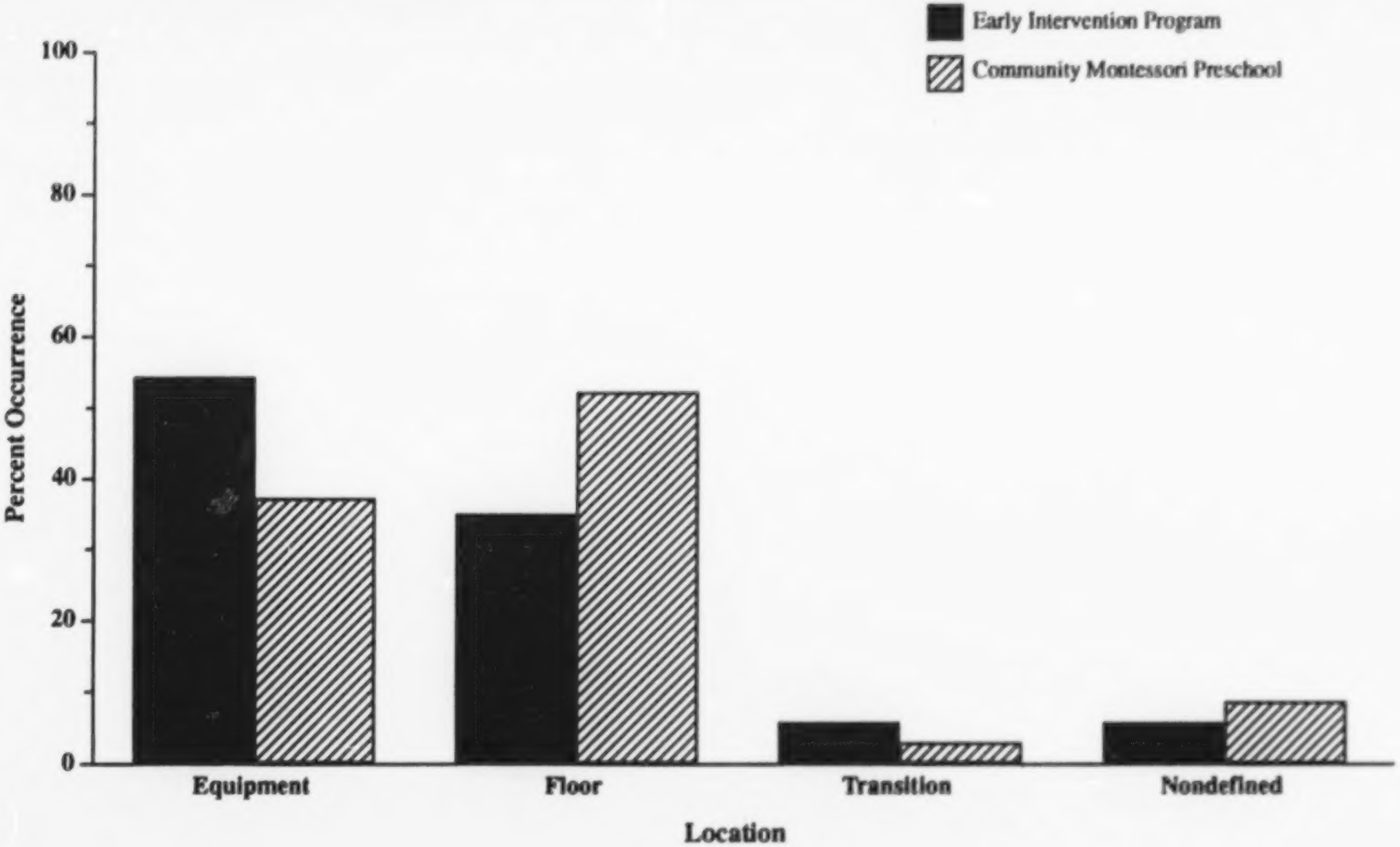


Figure 17. Comparison of percent occurrence of position variables across two settings

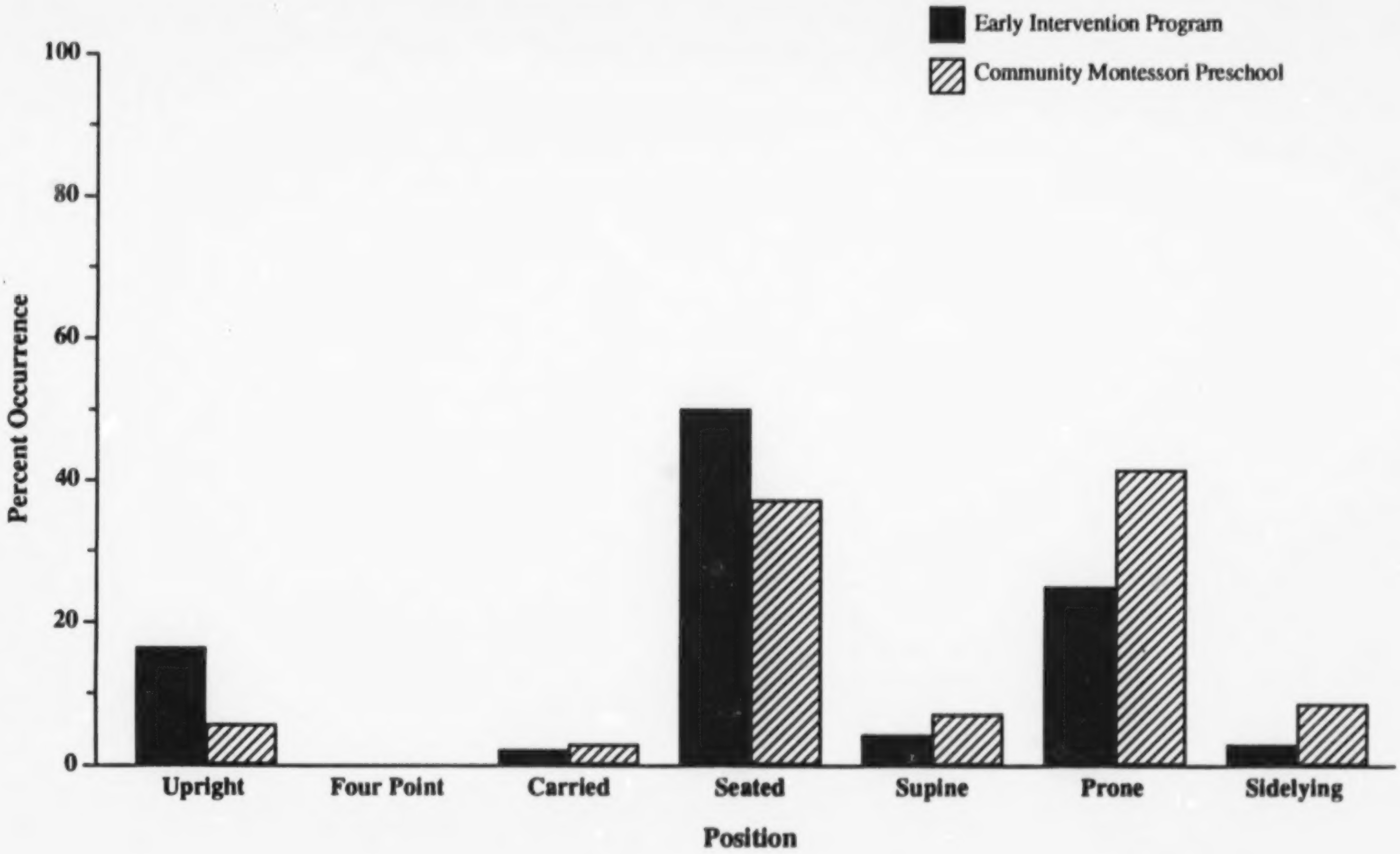


Figure 18. Comparison of percent occurrence of equipment variables across two settings

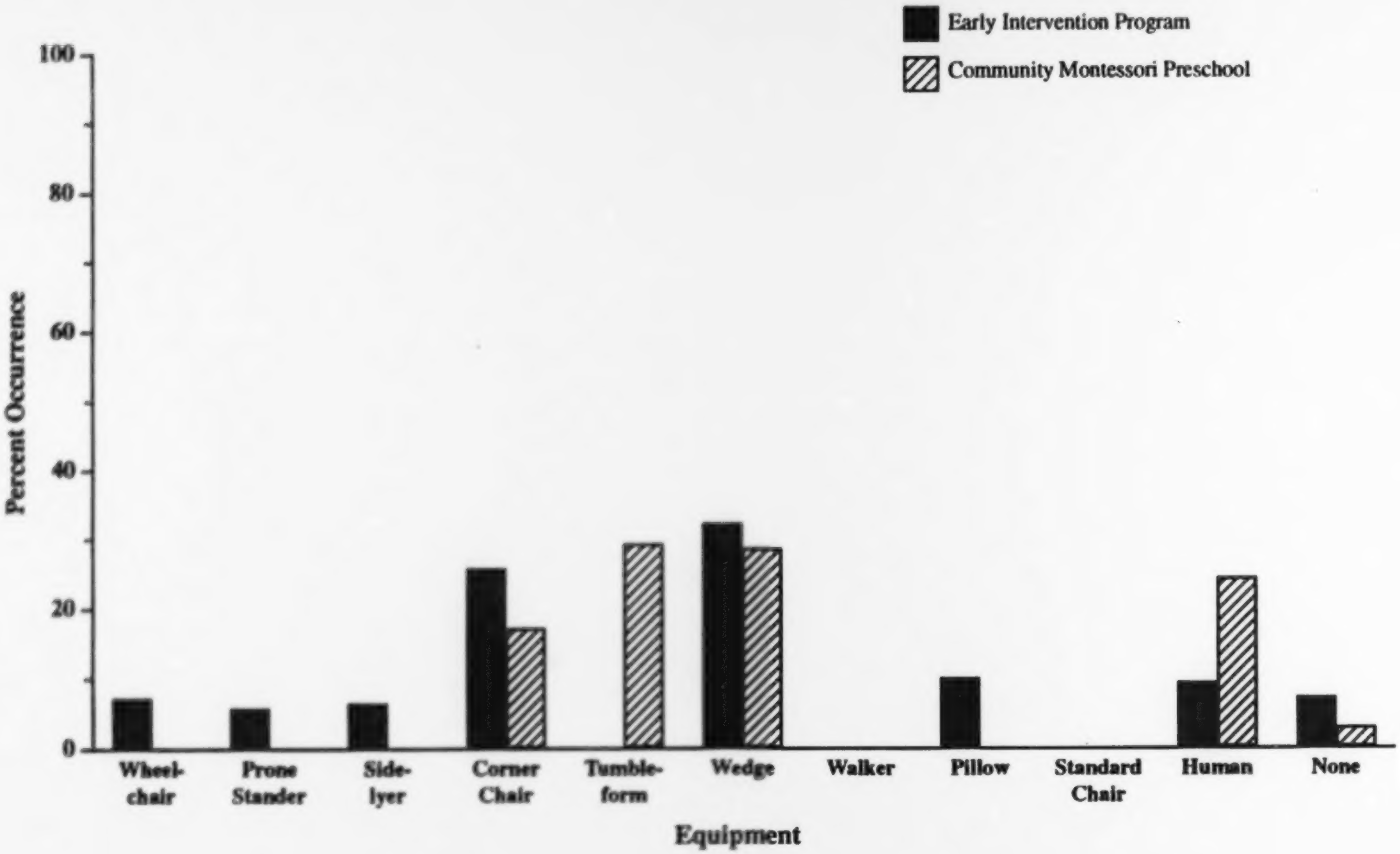


Figure 19. Comparison of percent occurrence of adult interaction variables across two settings

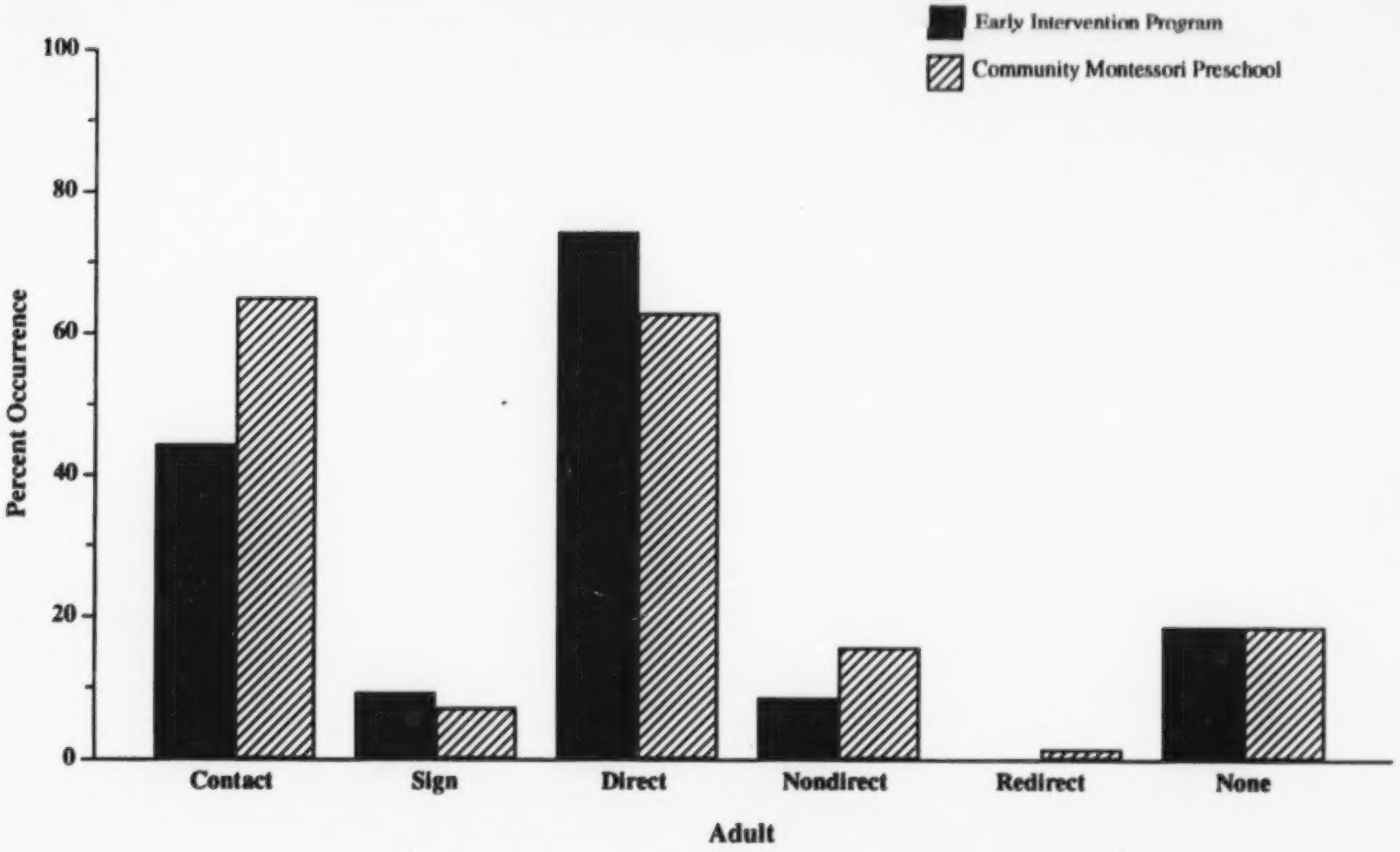


Figure 20. Comparison of percent occurrence of peer interaction variables across two settings

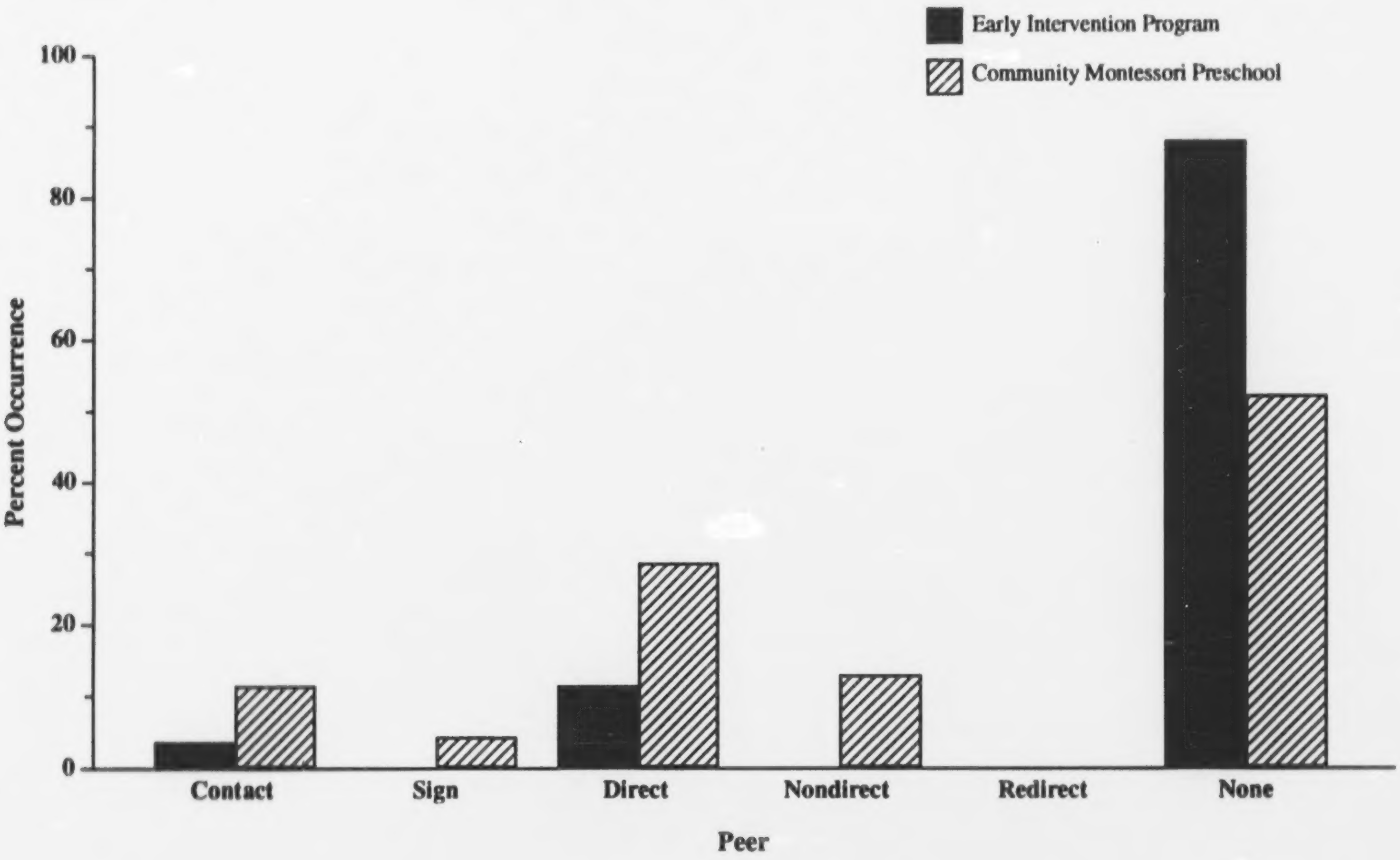
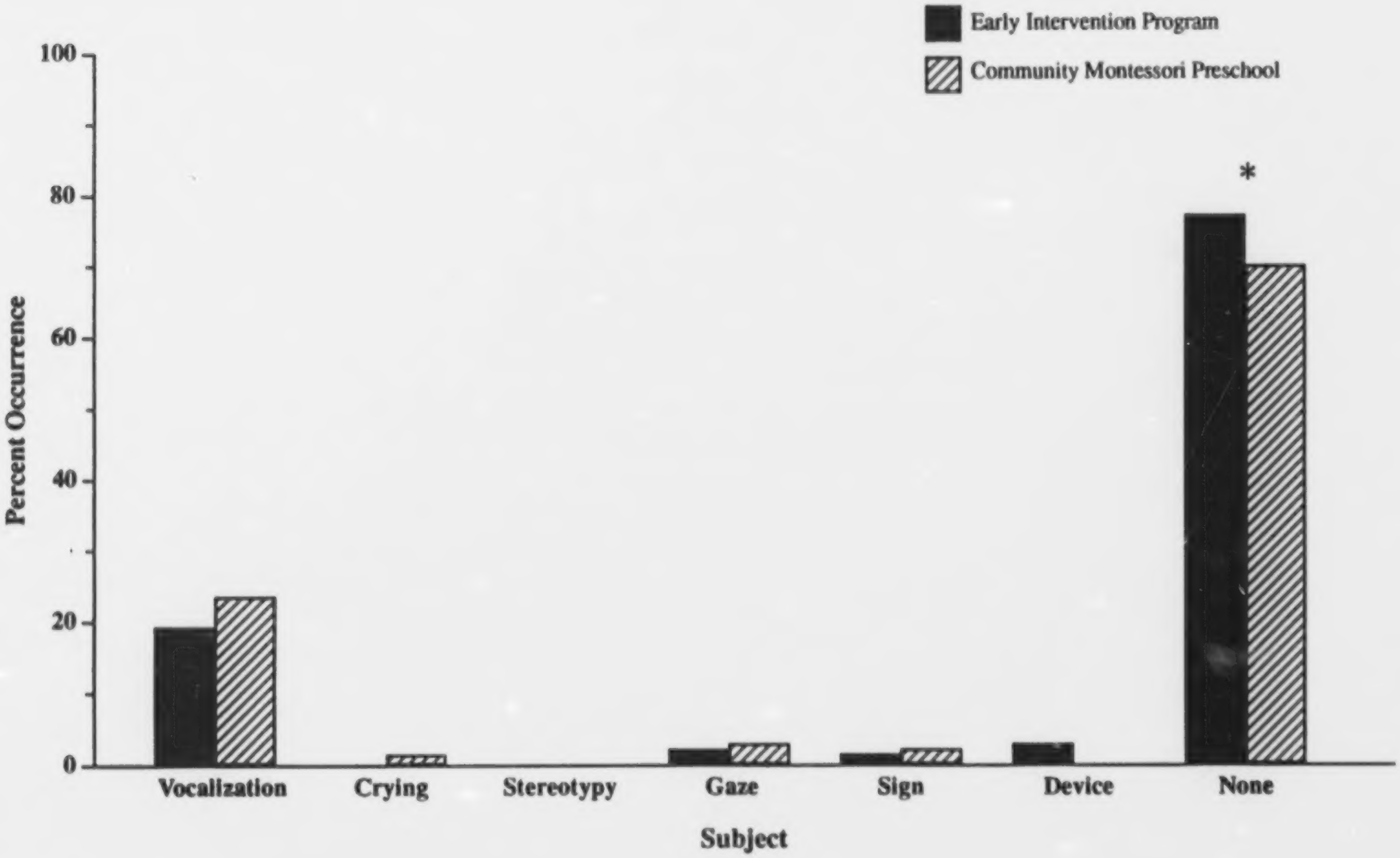


Figure 21. Comparison of percent occurrence of subject interaction variables across two settings



* Stastically significant

Figure 22. Comparison of percent occurrence of adults across two settings and two years

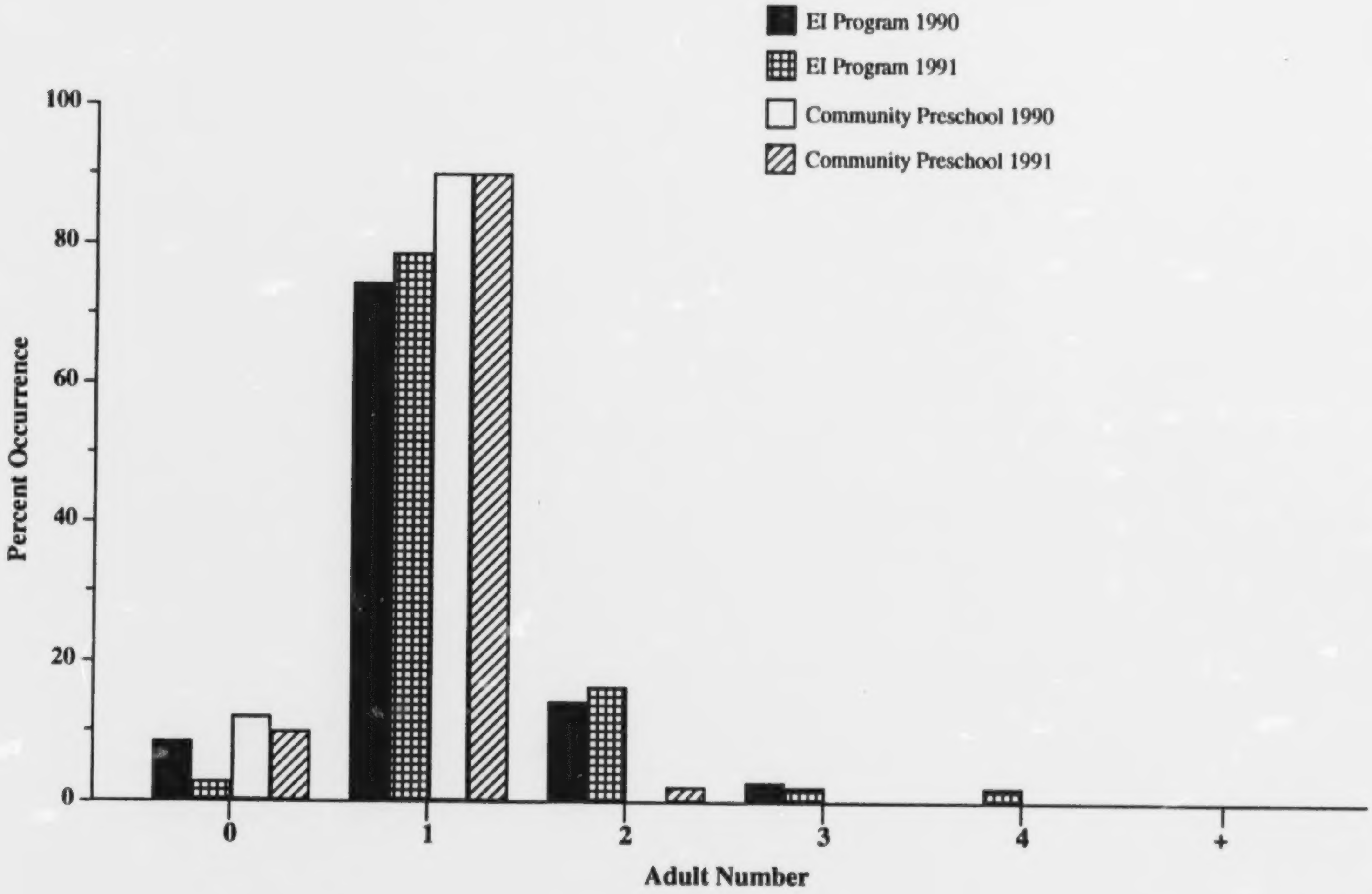


Figure 23. Comparison of percent occurrence of peers across two settings and two years

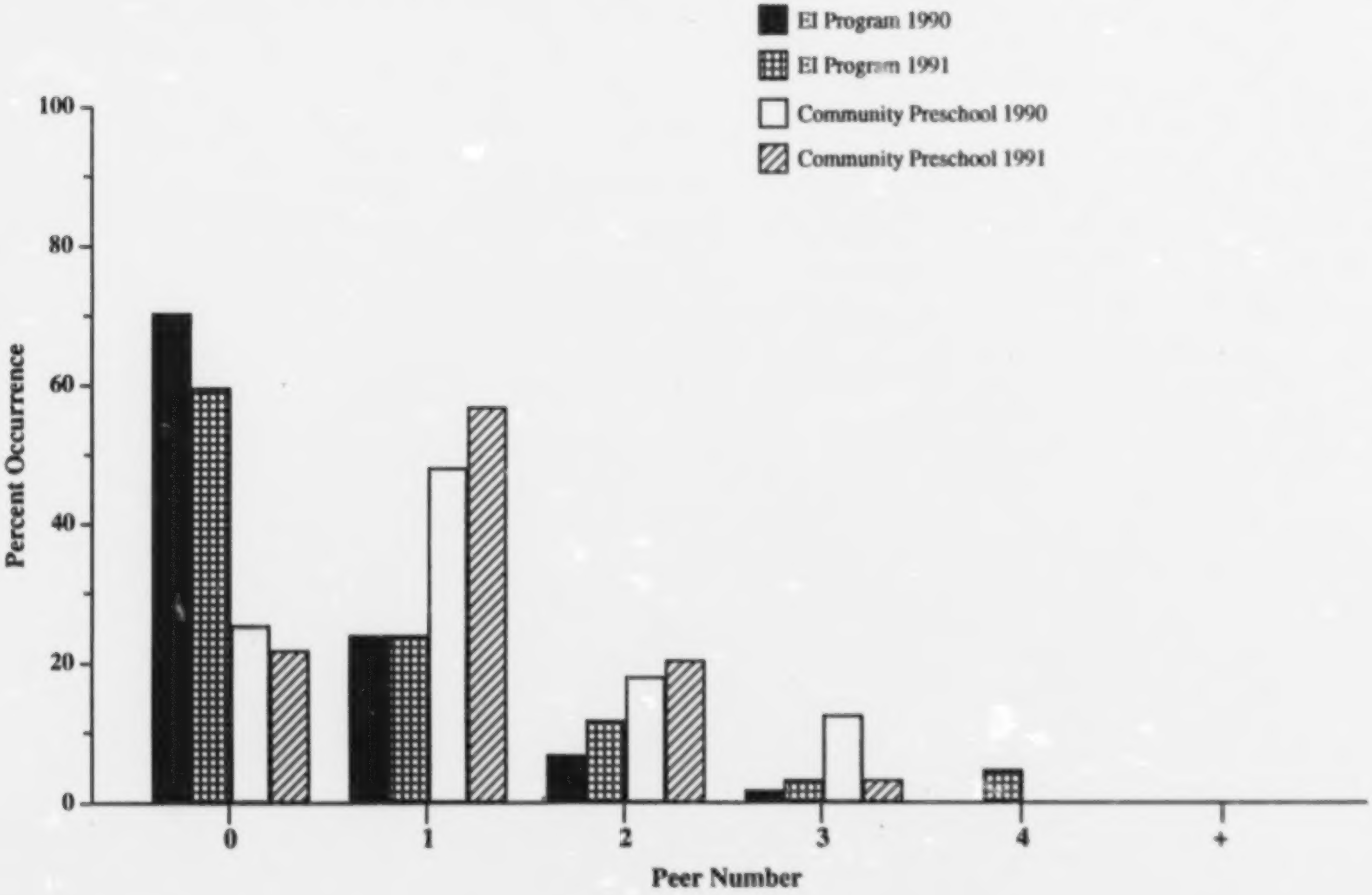


Figure 24. Comparison of percent occurrence of materials variables across two settings and two years

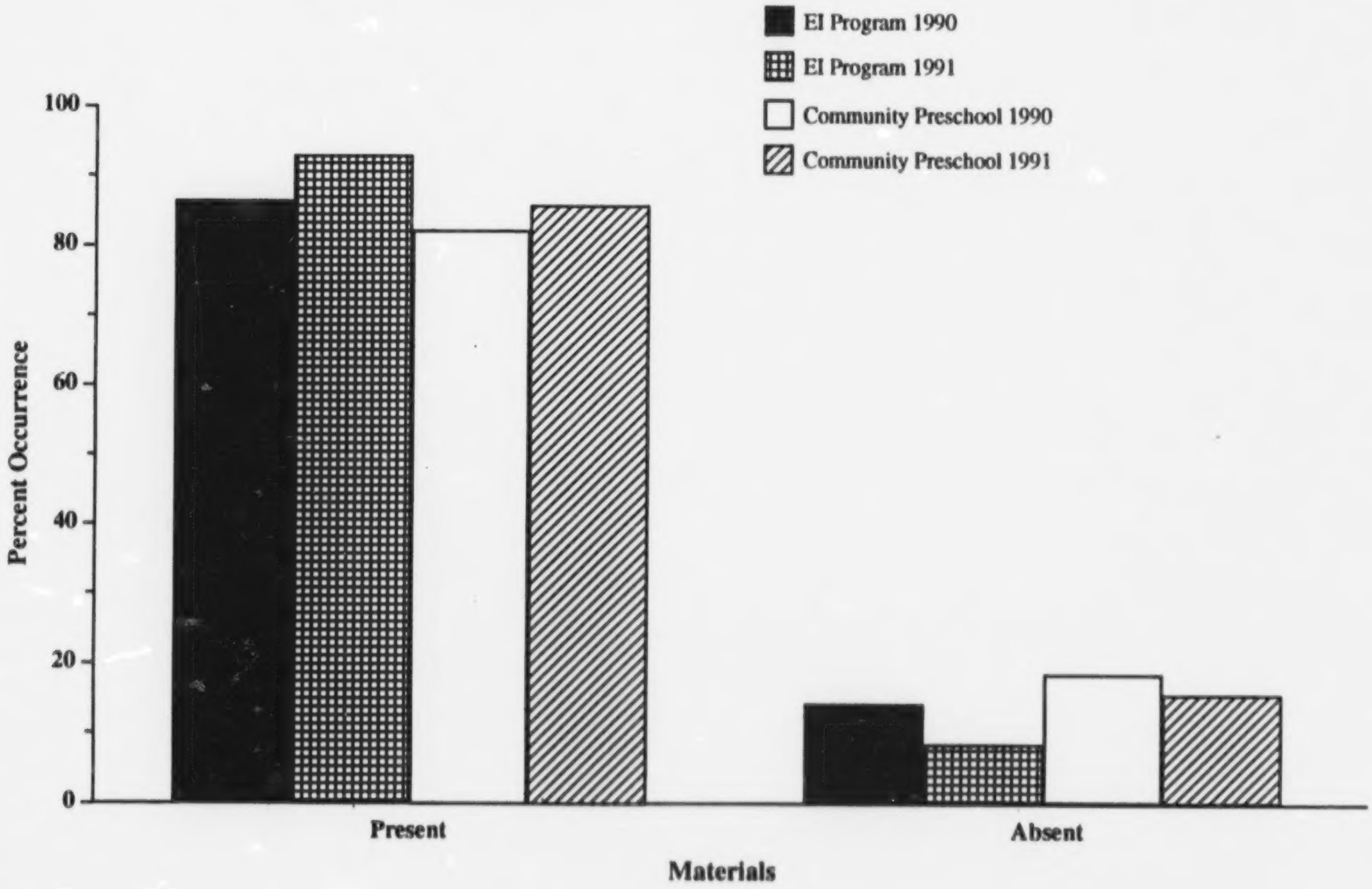


Figure 25. Comparison of percent occurrence of location variables across two settings and two years

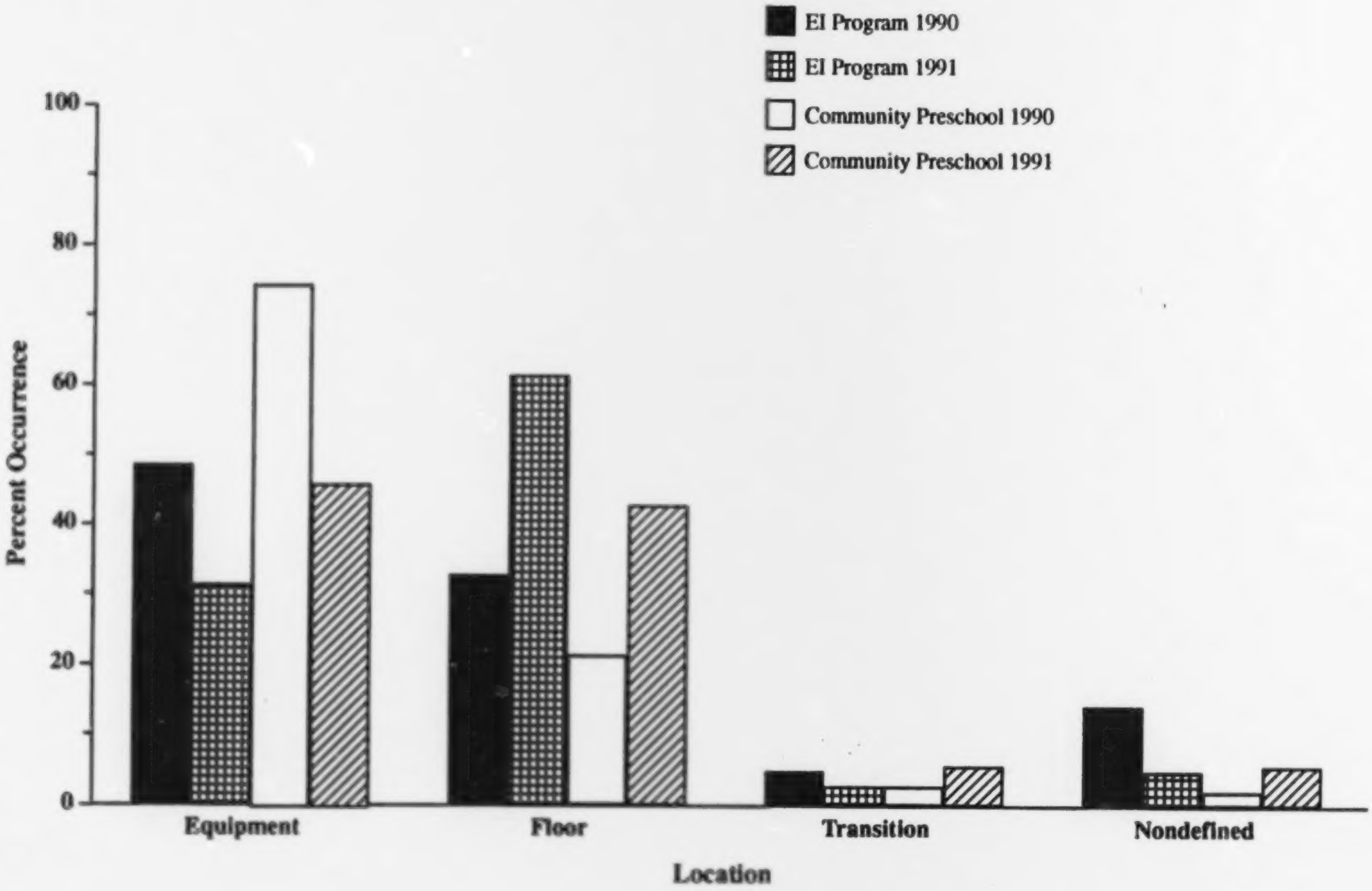


Figure 26. Comparison of percent occurrence of position variables across two settings and two years

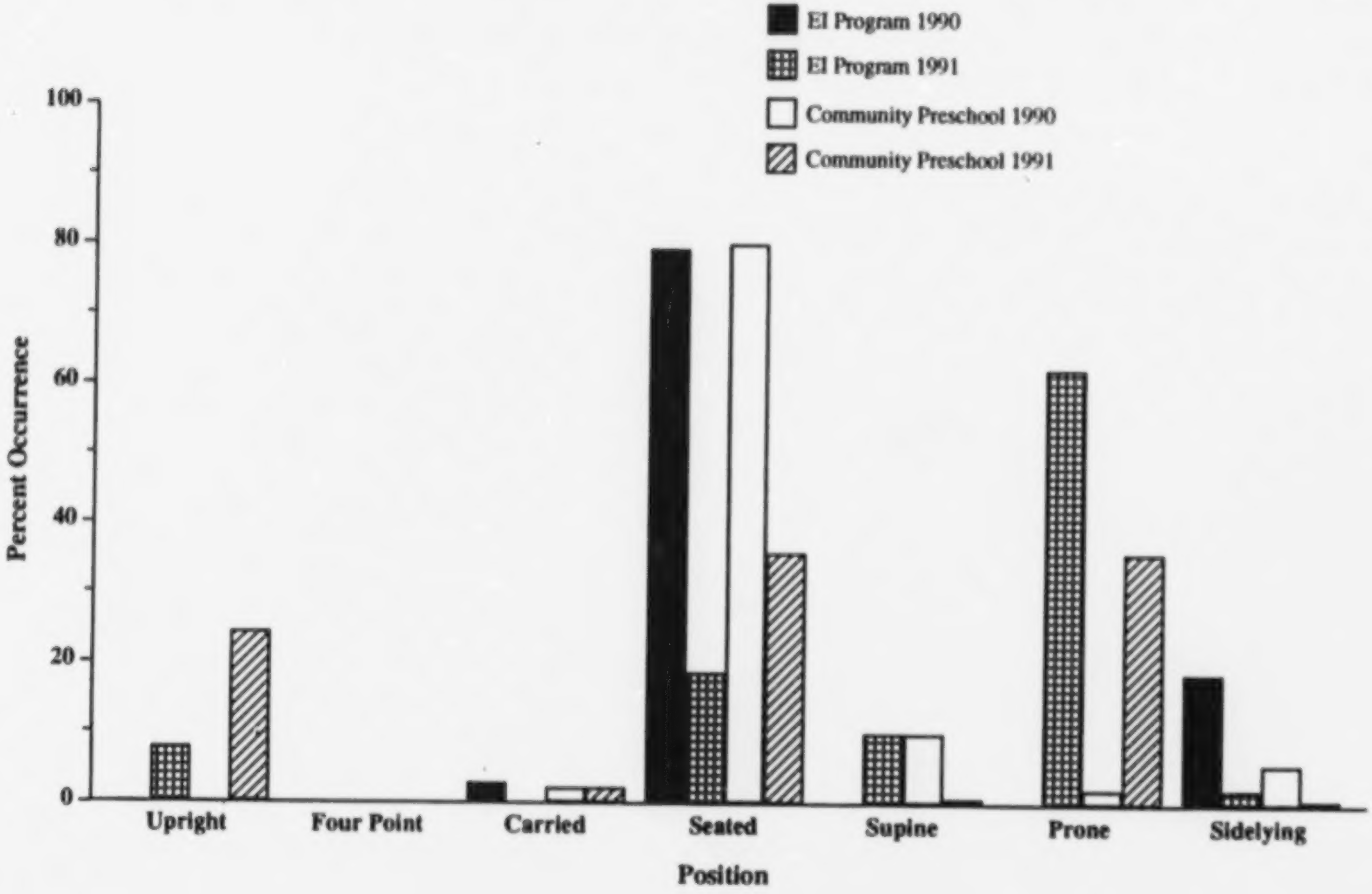


Figure 27. Comparison of percent occurrence of equipment variables across two settings and two years

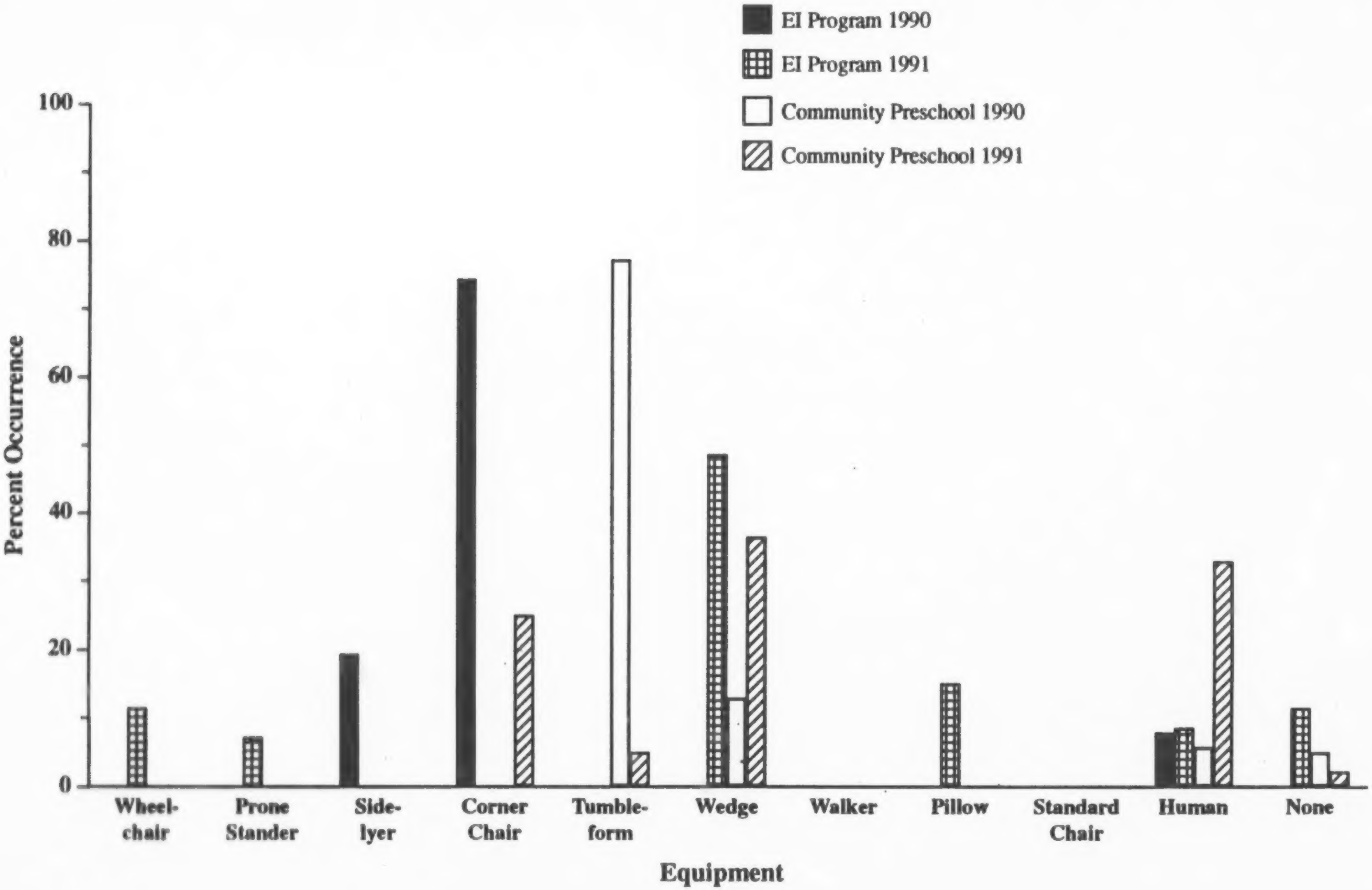


Figure 28. Comparison of percent occurrence of adult interaction variables across two settings and two years

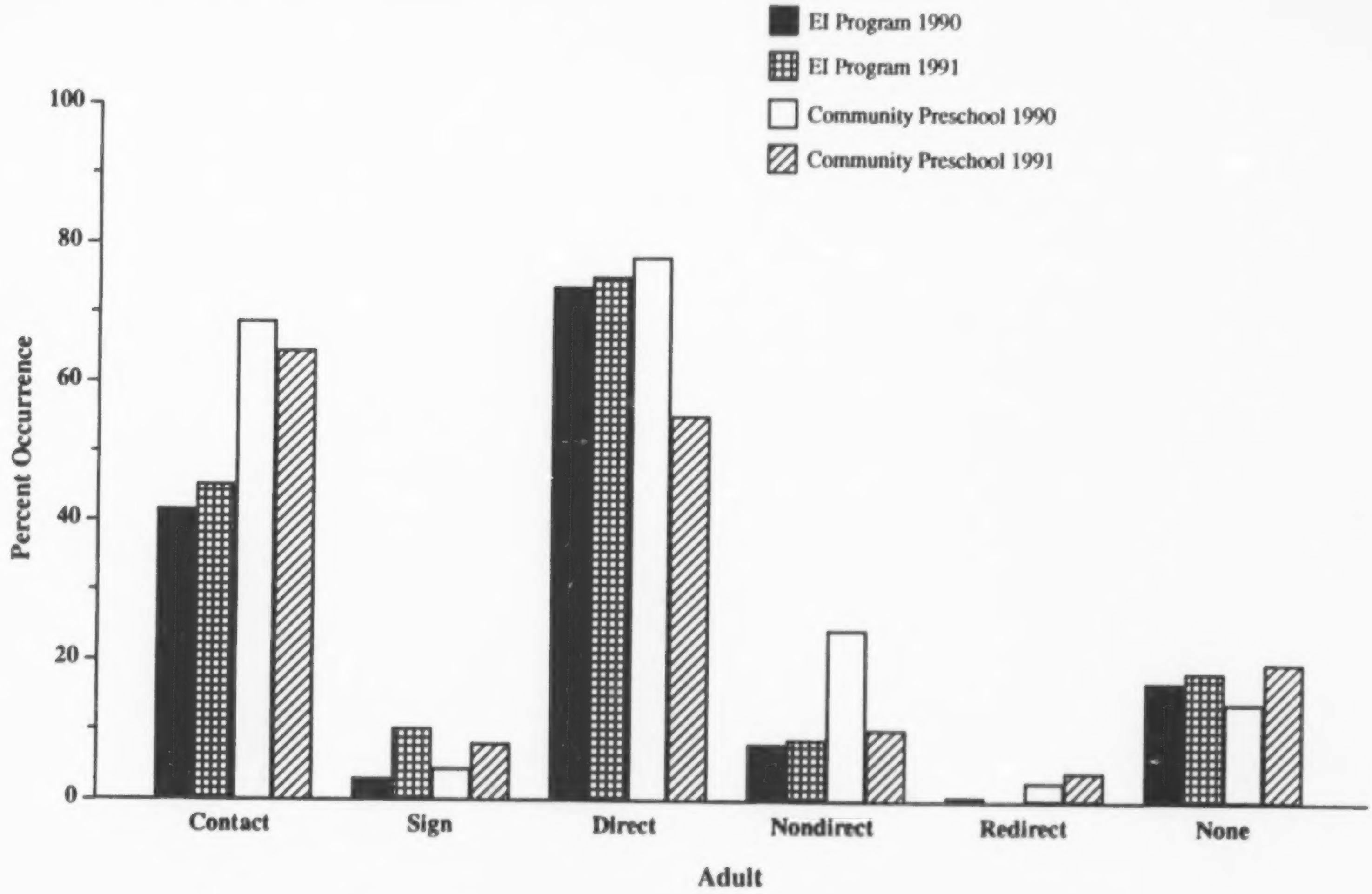


Figure 29. **Comparison of percent occurrence of peer interaction variables across two settings and two years**

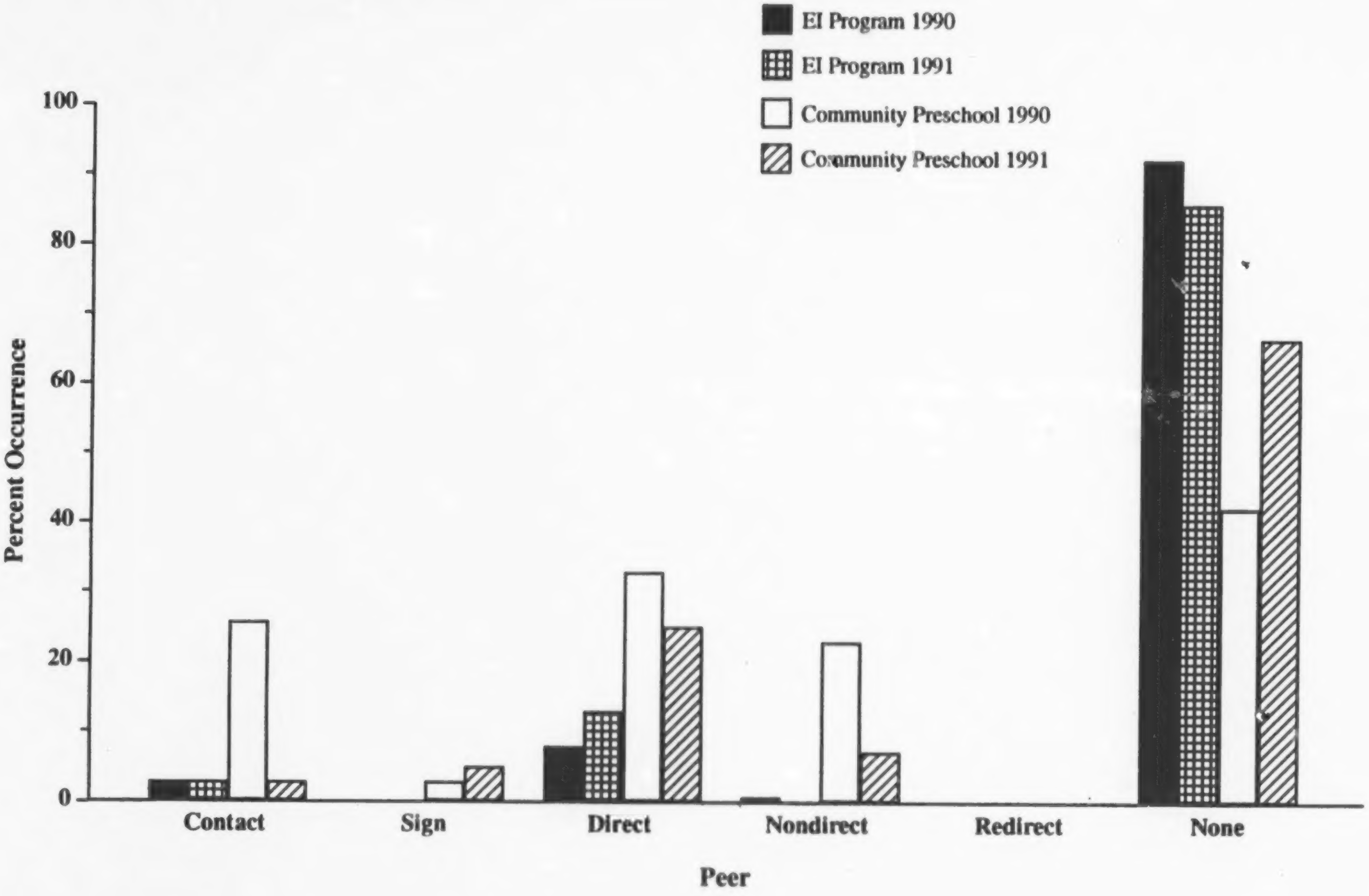
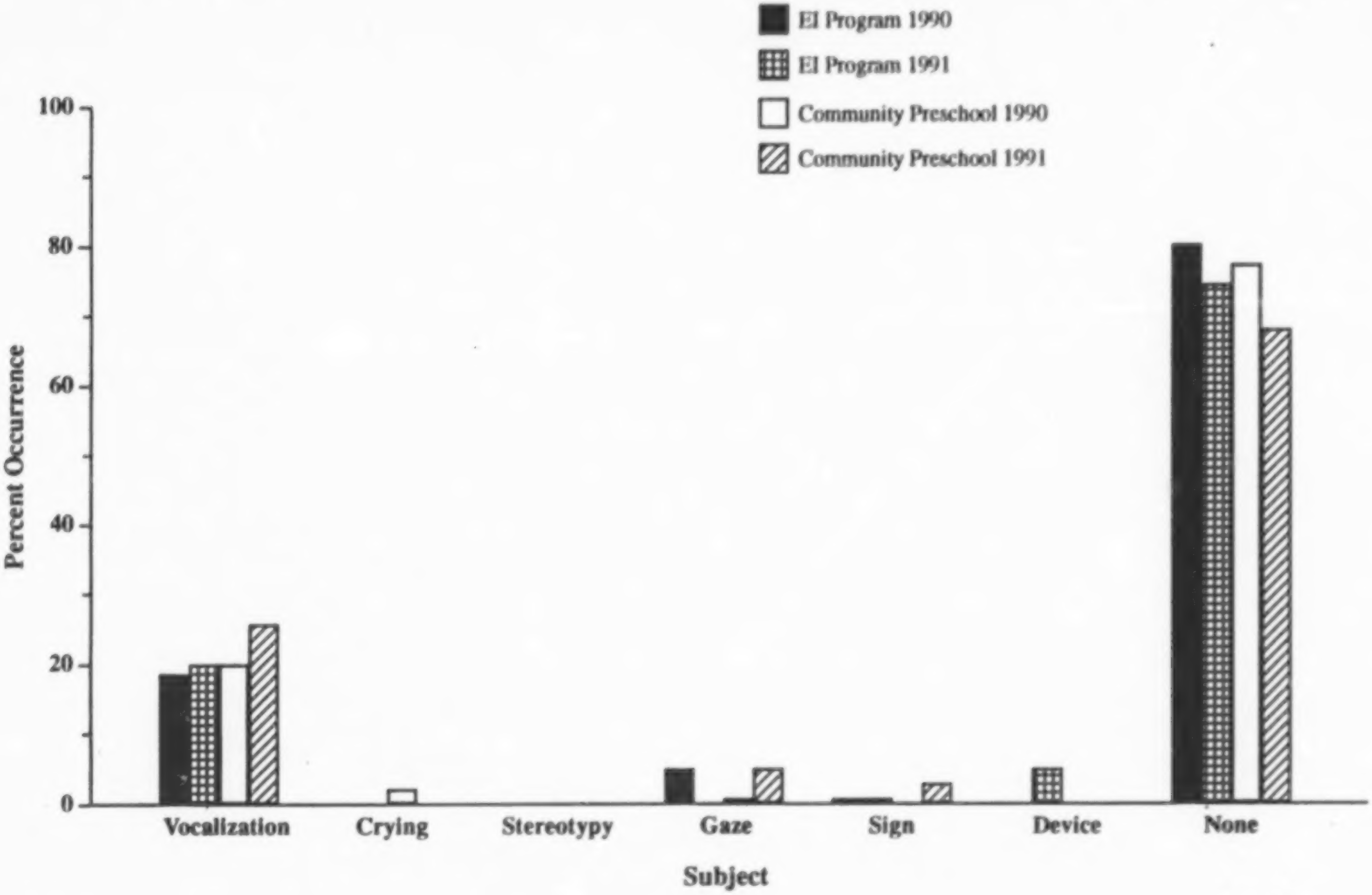


Figure 30. Comparison of percent occurrence of subject interaction variables across two settings and two years



PROJECT 2.3

VERBAL INTERACTIVE SKILLS TRAINING FOR TRANSITIONS

Mabel L. Rice, Ph.D., Department of Speech-Language-Hearing
Kim A. Wilcox, Ph.D., Department of Speech-Language-Hearing

TARGETED TRANSITION PROBLEM

The overall goals of this project were to evaluate the role of appropriate verbal interactive skills in the successful transition of children who have speech and/or language impairments (S/LI) into traditional classrooms and to develop appropriate intervention strategies to improve verbal interactive skills. Verbal interaction is a major dimension of adjustment for children with communication deficits transitioning from preschool to kindergarten. As preschoolers, children with communication handicaps are often reluctant to participate in verbal interactions with their peers, preferring to rely on adults to mediate their interactions (Rice, Sell, & Hadley, 1991). This tendency to avoid initiation of conversation with one's peers becomes a concern as children transition into kindergarten. It is predicted that verbal interactions will be highly sensitive to the changes in personnel and demands of the kindergarten setting.

OBJECTIVES

2.3-1 To describe children's verbal interactive skills prior to, upon entry to, and at the end of the first year of kindergarten.

2.3-2 Evaluate accuracy of parents' judgments of verbal skills (SLAS). Evaluate accuracy of teachers' judgments of verbal skills (SLAS).

2.3-3 Evaluate teacher attitudes about talking (TAS).

2.3-4 Assess role of parent/teacher perceptions in transition success.

2.3-5 To develop transition intervention strategies for children with speech/language impairments.

BACKGROUND

Recent changes in legislation reflect the national commitment to early intervention efforts. As PL 99-457 is implemented, states must provide intervention services for toddlers and preschoolers with speech/language impairments, as well as other developmental delays. This group of children whose only apparent developmental delay occurs in the domain of oral language constitutes the single largest handicapping condition in early childhood. Of the preschool children who received special education service in school year 1986, 69% or 184,727 of the 265,814 children served, were categorized as speech/language impaired (*OSEP Report to Congress*, 1988).

Concurrently, theoretical advances in the field of language development have inspired alternative models of service delivery for preschool children with speech/language impairments. These models stress the importance of teaching language embedded in the social context. This philosophy is central to The Language Acquisition Preschool (LAP) at the University of Kansas. LAP is a model language intervention program designed to provide services to children with speech/language impairments in the least restrictive environment. The program is based on a cognitive/social model (Hohmann, Banet, & Weikart, 1978), is generally child directed, and facilitates linguistic skills via naturalistic verbal interactions, occurring throughout the classroom day.

Our initial observations of child-child interactions in the LAP classroom generated various questions regarding the interface between language and social development. How do communication limitations affect children's social interactions? In turn, do differences in social interactive abilities influence teacher judgments of general competence? And finally, how do verbal interactive skills influence the transition into kindergarten?

THE IMPORTANCE OF VERBAL SKILLS IN CLASSROOM SETTINGS

Preschool and kindergarten teachers expect their students to demonstrate conversational skills (Hains, Fowler, Schwartz, Kottwitz, & Rosenkoetter, 1989). Conversational skills, however, are likely to be at risk for children with speech/language impairments. Children having difficulty with the structural aspects of language may be less likely to use language in social situations. In fact, these children are often characterized as reluctant communicators relative to their normally developing peers (e.g., Fey, 1986).

Furthermore, teachers' impressions of a child's ability may be based on differences in communication profiles. For example, 33% of kindergarten children suspected of speech and language problems repeated kindergarten or were placed in developmental first grade programs (Catts, 1990). Of the 35 children with significant language impairments, 17 or 49% did not advance to regular first grade classrooms. Many of these placements were based on perceived social immaturity. We hypothesize that these placements were influenced by social judgments based on the child's use of verbal interactive skills in the classroom.

In a recent study designed to test this hypothesis, we have demonstrated that kindergarten teachers do in fact make judgments about children (i.e., how smart, how socially mature) on the basis of verbal skills (Rice, Hadley, & Alexander, in press). Such judgments could limit a child's opportunities for academic advancement, if teachers confuse a language impairment with social immaturity.

METHODS AND OUTCOMES

Methods and outcomes are discussed relative to each objective.

2.3-1 To describe children's verbal interactive skills prior to, upon entry to, and at the end of the first year of kindergarten.

The verbal interactive skills of children with S/LI and normally developing children were evaluated. Subjects were children who attended the Language Acquisition Preschool (LAP) at the University of Kansas. LAP is an integrated preschool designed to facilitate language development for children with various degrees of language proficiency. Three groups of children are served in this setting: children developing language normally (ND); children with speech/language impairments (S/LI); and children learning English as a second language (ESL). At any one time, about 36 children are enrolled, equally distributed across the three groups. LAP is affiliated with the local school district and meets all state and federal service regulations for the development of IEPs and other intervention procedures. Two adults are in the classroom on a regular basis, a Lead Teacher and an Assistant Teacher.

The *Social Interactive Coding System* (SICS) (Rice, Sell, & Hadley, 1990) was developed and refined during the project to collect information on children's verbal interactions in LAP and the kindergarten classrooms. SICS is an on-line coding system. Data relative to several variables are collected: who the child is talking to, whether the child is initiating or responding, the number of interactions, and the number of child turns in the interaction. Data are collected in 5-min intervals, with a round of data collection consisting of 3 intervals or 15-min of observation.

Descriptive data collection with SICS extended from Year 1 to Year 4 of the grant, allowing the completion of longitudinal observations of children's verbal interactions across consecutive semesters of enrollment in LAP as well as the transition from preschool into kindergarten. The cross-sectional data reported in Rice, Sell, & Hadley (1991) involved 26 (ND = 9; S/LI = 9; esl = 8) children. The longitudinal database to examine the growth in verbal interactions between entry to and exit from preschool includes 17 children (ND = 6; S/LI = 6; ESL = 5) (Hadley, Rice, & Wilcox, in preparation). In addition, data for evaluating the preschool-to-kindergarten transition includes 20 children (16 S/LI, 4 ND).

Prior to data collection each year, research assistants were trained to an acceptable level of reliability (85%) overall. This training period required initial inservicing, approximately 10 hours of videotape training, followed by on-line training in the classroom. The process typically took 6-8 weeks. Over the course of the project, 7 research assistants were trained. Research assistants collected on-line conversational data in LAP as well as in fourteen different kindergarten classrooms.

Following each round of data collection, SICS data were entered into computer files. These files range from 6000-8000 records per round. SICS data were reduced to five primary indices:

- frequency of interaction
- frequency of initiation
- proportion of peer interaction
- proportion of peer initiation
- proportion of multi-word verbal responses.

These data points then were organized in two ways:

- cross-sectionally by cohorts (i.e., kindergarten, preschool 4-year-olds, and preschool 3-year-olds); and,
- longitudinally.

The targeted variables of interest in our initial descriptive analyses are: frequency of interaction, frequency of verbal initiations, proportion of peer interaction, proportion of peer initiation, and proportion of multiword responses.

Initial findings from the social interactive coding were reported in Rice, Sell, & Hadley (1991) and Hadley & Rice (1991). Normally developing children were found to be the preferred partner for peer initiations. When children with S/LI initiated, they were more likely to be ignored. When children with S/LI were initiated to, they were more likely to be nonresponsive. Lastly, children with S/LI were more likely to initiate toward an adult in the classroom than toward their peer. There were no differences in the likelihood of peer initiations across the groups, which may be a consequence of the teaching strategies implemented in the LAP classroom.

Examination of the change in the proportion of peer-directed initiations is being conducted in the longitudinal samples (Hadley, Rice, & Wilcox, in preparation). Subject selection for the longitudinal sample was based on the following criteria. Children were included only if (a) they had been enrolled in the preschool for at least four full semesters; and (b) an observation of their social interactions had been obtained during their first semester of enrollment. In addition, children in the SLI group were required to demonstrate both receptive and expressive language delays at the time of enrollment. This additional condition was included so as to form a more homogeneous SLI group to aid in later interpretation of the findings.

The children ranged in age from 32 to 47 months at the time of the first observation. The mean ages (and standard deviations) for each group were as follows: ND = 43.33 (3.56), SLI = 39.33 (2.25), and ESL = 33.60 (1.52). It should be noted that children in the ESL group were significantly younger than the children in both the SLI and ND groups, although there was not a statistically significant difference between the SLI and ND groups.

As in the normative literature, our longitudinal data revealed an increase in the rate of peer interactions and peer initiations with age. This generalization held for all groups of children. Although the frequency of peer initiations for the SLI group at preschool exit had only begun to approach the frequency of peer initiations for the ND group at preschool entry.

Group differences were also apparent in the percentage of initiations that were directed to peers over time. Our data indicated that during the first semester of preschool enrollment, the ND children's initiations were directed to their peers approximately 40% of the time (M = 40.5, range = 14% to 58%). As might be expected the new ESL children, with virtually no English skills, relied completely upon the adults in the classroom. Four out of five of the ESL children did not direct any initiations to their peers. The remaining ESL child directed 14% of her initiations to peers. This child was placed in the ESL group because her native language was ASL; however, in contrast to the other children in this group, she had considerably more English skills. The S/LI children fell in between the ND and ESL children, directing an average of 11.6% of their initiations to their peers (range = 0% to 44%). However, near the end of the second year of preschool, just before making the transition into kindergarten, the majority of the ND children were initiating to their peers more often to adults (over 50%; ND M = 59.1; range = 26% to 78%). In contrast, the three SLI subjects who did not receive specific intervention aimed at increasing their proportion of peer initiations remained well below the 50% mark (M = 31%, range = 22% to 38%), whereas two of the three S/LI children that received specific intervention programming increased their proportion of peer-directed initiations beyond this level.

Over this 18-month period of time, the ESL children had increased their proportion of initiations to peers to an average of 35.6%. Recall however that these children were 6 to 10 months younger than the SLI and ND children and many were still eligible for another year of preschool programming. For the three children who remained in the program, a steady increase in peer-directed initiations was noted throughout the third year.

These descriptive summary measures suggest that children with limited language skills are more reluctant to initiate interactions with peers upon entry into preschool intervention programs and continue to demonstrate differences in this parameter even at after 18 months of preschool intervention.

2.3-2 Evaluate accuracy of parents' judgments of verbal skills (SLAS). Evaluate accuracy of teachers' judgments of verbal skills (SLAS).

The SLAS was developed to allow parents to participate in ongoing assessments of their preschooler's communication skills. It was field-tested in LAP over a period of three years. SLAS is a brief questionnaire made up of 19 individual items. The items address a range of communicative dimensions. Some items correspond to formal measures of speech or language, such as articulation, receptive or expressive vocabulary, or mean length of utterances. Items that describe a child's conversational assertiveness or responsiveness were also developed. Finally, communication skills that preschool and kindergarten teachers deemed necessary for school readiness were also included on the questionnaire (Hains, Fowler, Schwartz, Kottwitz, & Rosenkoetter, 1989). Overall, the SLAS asks for parental judgements of a child's articulation and general intelligibility, vocabulary, sentence construction, and conversational skill using a 7-point Likert Scale.

Reliability. Interrater reliability for the instrument was assessed for the individual SLAS items over a period of five semesters. Ratings were obtained from the LAP Lead Teacher, who was also a certified SLP, and the LAP Assistant Teacher. These individuals completed the questionnaires independently for each child enrolled in LAP. Interrater reliability was assessed using the ratings of native speakers of English only. The number of children rated each semester varied from 13 to 20.

Individual analyses of variance (ANOVA) were conducted for each of the items, to test for possible differences between raters. No differences were found for any of the 19 SLAS items. However, only 14 of the 19 items were significantly correlated between raters across four or more semesters (all $r > .65$, $p < .01$). The remaining five items proved to be unreliable and were dropped from the analyses (Hadley & Rice, in press; Hadley, Rice, & Wilcox, in preparation).

Validity. The 14 items that met the reliability criteria were then placed in six scales reflecting the following areas: assertiveness, responsiveness, semantics, syntax, articulation, talkativeness. This discussion is limited to the first five scales. The individual items included in these scales are listed in Table 1.

Discriminant function analysis procedures were used to evaluate the effectiveness of the five scales in correctly classifying the children into the appropriate language groups: normally developing language, language impaired, speech (and language) impaired. Stepwise variable selection was used to examine the composite scales that entered into the discriminant functions for each of the five semesters. Three scales emerged as most important for predicting group membership: articulation, assertiveness, and semantics. Using these scales alone, the discriminant functions correctly classified an average of 86% of the children in each sample (range = 75% to 95%).

Finally, Weinberg (1991) examined the construct validity of the SLAS. The mothers of 42 preschoolers rated their children's speech and language competencies, along with a certified SLP. The mean scores for the composite SLAS scales were compared to standardized scores on a battery of formal speech and language measures: (a) *Reynell Developmental Language Scales - Revised* (Reynell, 1985); (b) *Peabody Picture Vocabulary Test - Revised* (Dunn & Dunn, 1981); (c) *Goldman-Fristoe Test of Articulation* (Goldman & Fristoe, 1986); (d) mean length of utterance (MLU) following the conventions of Miller (1981); and (e) descriptive measures of verbal interaction obtained from the *Social Interactive Coding System* (Rice, Sell, & Hadley, 1990). The composite SLAS scales were found to have moderate to moderately high correlations for all comparisons of interest. This was true for both mothers (range $r = .40$ to $.79$) and the SLP (range $r = .46$ to $.80$). Interestingly, the highest correlation between maternal ratings and formal measures was noted for the Articulation composite and the *Goldman-Fristoe Test of Articulation* whereas the highest correlation between the SLP's ratings and formal measures was noted between the Syntax composite and MLU.

Intended Use of the SLAS These initial analyses suggest that the SLAS is a reliable and valid tool. It is also able to discriminate between children with age-appropriate language skills and those with speech and/or language disorders. However, it is intended to supplement, not replace, formal diagnostic evaluations. It is designed to be used by parents to provide ongoing assessments of their child's speech and language competencies. With this information, an SLP will be better prepared to help parents participate more fully in the process of formulating their child's Individualized Education Program (IEP). For example, when parents and the SLP are in close agreement, the SLAS could be used to select appropriate goals for intervention. If there are differences in perspective between the parents and the SLP, the individual items can serve as a point of departure for discussing the factors or social contexts which may have influenced the differences in the ratings. Clearly, the objective underlying these discussions is to arrive at agreement over the prioritization of the child's intervention goals.

Parental versus profession judgments of children's speech nd language competencies
A study was undertaken to obtain parental judgments of their child's speech and language competencies and to compare the parental judgments to the judgments of an SLP. The children of interest were in the 3 to 5 year old age range, those eligible for services under Part B of the Individuals with Disabilities Education Act (IDEA).

Subjects. The SLAS questionnaire was completed by mothers and fathers of each child enrolled in LAP. In addition, an SLP completed the survey for all children. Only children with ratings from all 3 raters were included. Complete sets of SLAS ratings from mothers, fathers, and the SLP were available for 34 children.

All children were between the ages of 3 and 5 and demonstrated normal intelligence as measured by the Kaufman Assessment Battery for Children (Kaufman & Kaufman, 1983). Fourteen children were developing language normally (ND), whereas 20 children were diagnosed with Specific Language Impairment (SLI) at the time of initial enrollment in LAP. The children in the ND group were developing normally in all aspects of development. The children in the SLI group met the standard exclusionary criteria. They all had normal vision and hearing and had no known history of neurological or social-emotional disorders. In addition, the children with SLI scored one or more standard deviations below the mean on two or more standardized measures of speech and language development.

The families that participated in this study represented a wide range of socioeconomic backgrounds. The majority of mothers of children in both groups had completed some college or attained a BA (ND = 91%, range = high school degree to BA; SLI = 78%, range = 9th grade to MA). All the fathers had completed 12 or more years of education; the majority had also attended some college or attained a BA (ND = 73%, range = some college to Ph.D.; SLI = 47%, range = 12th grade to Ph.D.).

Procedure. The SLAS was distributed to the parents and the SLP at approximately the same time each semester. All respondents were able to complete the form in approximately 10 minutes. The SLP involved in this study was the LAP Educational Coordinator. As the Lead Teacher, she observed these children's communication skills daily.

Results. The ratings for the individual SLAS items were then used to compute a mean rating for the five composite SLAS scales (refer to Table 1). The composite scale scores were computed by adding the ratings for the individual items and dividing by the total number of items. The composite scale scores were used in the following analyses.

The first question addressed whether the parents and the SLP rated the children's speech and language competencies in a similar manner. Interrater reliability was assessed with zero-order correlations for the orthogonal comparisons (a) mothers vs. fathers and (b) parents vs. the SLP. These correlations indicated that interrater reliability was moderately high to high for all five scales (r range = .77 to .90). The mean score for each composite scale showed that, as a group, fathers typically rated their child's skills higher than mothers, who in turn rated their child's skills higher than the SLP. In addition, parental ratings showed a restricted range in comparison to the SLP ratings as evidenced by somewhat smaller standard deviations.

The second question addressed whether there were certain aspects of speech and language competencies for which parents and professionals were more likely to agree or disagree. We were interested in whether these differences would be influenced by the child's communicative status. Therefore, each composite scale was analyzed using a 2 X 3 mixed ANOVA with repeated-measures. The between group factor was the child's Language Group (ND vs. SLI), whereas the repeated factor was Rater (Mothers vs. Fathers vs. SLP). Given the five individual analyses, a .01 alpha level was used to maintain the experiment-wise alpha level at .05.

Language Group was significantly different for all five scales confirming the between-group differences expected (all $F > 32.71$, $p < .001$). Main effect Rater differences were apparent for four scales: Assertiveness ($F(2, 62) = 16.97$, $p < .001$); Responsiveness ($F(2,62) = 7.27$, $p < .001$); Semantics ($F(2,62) = 10.65$, $p < .001$); and Syntax ($F(2,64) = 11.27$, $p < .001$). Importantly, there were no Rater differences on the Articulation scale. Posthoc Scheffé tests indicated that fathers rated their children significantly higher than did mothers on the Assertiveness scale ($F(1, 31) = 14.28$, $p < .001$) and on the Syntax scale ($F(1, 32) = 11.80$, $p < .01$). When averaged together, the parents' combined ratings were significantly higher than the SLP's ratings for all four scales (all $F > 8.49$, $p < .01$). Finally, interaction effects were only apparent for the Responsiveness scale ($F(2, 62) = 4.76$, $p < .01$). As can be seen in Table 2, there was close agreement between the parents and the SLP among the children in the ND group, but the parents of the children with SLI rated their children's responsiveness significantly higher than did the SLP. The same trend was evident for the Assertiveness scale, although this interaction was only marginally significant ($F(2, 62) = 3.53$, $p = .04$). For the remaining scales, there were no significant differences between the Raters as a function of the child's Language Group.

In summary, parent and professional ratings of children's speech and language abilities were highly correlated with one another. These strong correlations between parents and the professional are consistent with previous indirect communication assessment of global language skills by Nass, Watts, Grissom, and Oshrin (1981). In addition, the mean ratings of the parents and the SLP were highly similar for the Articulation scale. This was true for parents of children in both the ND and SLI groups. On the other hand, the four scales where rater differences were apparent related to the children's language abilities. Overall, the rater differences were most pronounced for the Assertiveness scale. For the parents of children with SLI, the differences were most apparent for both conversational assertiveness and responsiveness.

2.3-3 Evaluate teacher attitudes about talking (TAS).

Talking at School (TAS) was developed to describe the range of classroom climates created, in part, by teachers' attitudes toward talking. In its current form, the TAS consists of two sections, both of which utilize a 5-point Likert scale (see Figure 1). Section 1 measures the degree to which teachers encourage talking across eleven classroom activities such as *Center Time* or *Story Time*. Response options for the first scale range from "talking is..." *not allowed* (1) to *permitted* (3) to *encouraged* (5). Section 2 provides a list of 25 classroom behavioral infractions. The infractions are both verbal (e.g., interrupts teacher) and nonverbal (e.g., gets out of line). Response options for the second scale range from "the behavior..." *is not allowed*

(1) to *sometimes may occur* (3) to *is permitted* (5). Some of the items were drawn from a classroom observational system and a survey of teacher expectations for school readiness (Fowler, 1982; Hains et al., 1989). Additional items were added based on classroom observations of teacher behavior and informal interviews in which teachers expressed concerns for particular child behaviors.

A total of 145 kindergarten and preschool teachers participated in this study. District superintendents, special education directors, and directors of community-based preschools in three school districts in eastern Kansas were contacted to solicit their teachers' participation. The school districts were selected to represent differences in the average socio-economic backgrounds of the communities. A total of 85 kindergarten teachers received the survey with 64 teachers returning it. A total of 159 surveys were sent to the 27 participating program directors; 88 (55%) were returned.

Data from a third group of teachers was also available. This group consisted of 13 head teachers in special education classrooms from the same three school districts. These teachers provided services to children with a range of special needs. Because the number of teachers available in the special education group was considerably less than the first two groups, their responses were not incorporated into any of the statistical analyses.

The first question addressed differences in teacher attitudes as a function of the classroom activities listed in Section 1 of the survey. Teachers were most likely to encourage talking during *Arrival* and *Center Time* activities and least likely to encourage talking during *Story Time*. The ordering of activities between preschool and kindergarten teachers was nearly identical with only one reversal among the first two activities. The special education preschool teachers encouraged talking to a greater extent than both kindergarten and community-based preschool teachers in all classroom activities. Importantly, *Story Time* was the only activity in which the preschool special education teachers discouraged talking.

Two summary scores were calculated for each teacher to capture the differences in the amount of talking encouraged during the child-centered and teacher-directed types of activities. All three groups of teachers encouraged more talking in child-centered activities than in teacher-directed activities. There was no difference between the preschool and kindergarten teachers in how much talking they encouraged during child-centered activities ($\underline{t}(125) = .46$, $\underline{p} > .05$). The majority of teachers rated talking as encouraged across all activities of this type. On the other hand, a group difference was evident for the teacher-directed activities ($\underline{t}(125) = 2.06$; $\underline{p} < .05$) with preschool teachers being more likely than kindergarten teachers to encourage talking. It was also the case that ratings for the teacher-directed activities revealed greater individual variability within both groups of teachers, with ratings for individual activities spanning the entire scale.

In summary, both kindergarten and preschool teachers exercised greater control over how much talking was allowed in activities that were teacher-directed. However, kindergarten teachers did so to a greater extent. For most kindergarten teachers, talking was *permitted*, but not *encouraged* in teacher-directed activities although teachers varied considerably along this dimension. Thus, teachers' attitudes about the importance of verbal interaction during teacher-directed activities may be more informative for estimating the general climate of individual classrooms than estimates obtained only during child-centered activities.

The second section of the survey examined teachers' tolerance for specific behavioral infractions. These behavioral infractions were both verbal (e.g., interrupts teacher) and nonverbal (e.g., gets out of line). It was expected that teachers who permitted children's verbal participation in teacher-directed activities would be more tolerant of *verbal* behavioral infractions; differences were not predicted for the nonverbal infractions. To test this prediction, teachers were organized into three groups based on their summary scores for teacher-directed activities drawn from Section 1. Each teacher's summary score was converted to a z-score. Teachers with z-scores above 1.00 were classified as PARTICIPATORY teachers. Relative to the entire sample, these teachers reported that they permitted and even encouraged talking during some teacher-directed activities. Teachers with z-scores below -1.00 were classified as DIDACTIC teachers. Although these teachers may have encouraged talking in child-centered activities, they reported that they did not allow it during teacher-directed activities. The remaining teachers, the MIXED group, fell between the two extreme teacher styles with z-scores ranging between 1.00 and -1.00. This classification system was used to assess teachers' tolerance for verbal and nonverbal classroom infractions. Verbal and nonverbal indices were computed by summing across all items within each category. To facilitate comparison of the two indices, each index was divided by the total number of items it contained.

Using these standardization procedures, 11 preschool and 13 kindergarten teachers were placed in the PARTICIPATORY group, 14 preschool and 13 kindergarten teachers were placed in the DIDACTIC group, and the remaining 38 preschool and 38 kindergarten teachers were included in the MIXED group.

Differences in the mean scores for the verbal and nonverbal indices for the preschool and kindergarten teacher groups were tested with four univariate ANOVAs. For the preschool teachers, the group means differed for the verbal index ($\underline{F}(2,61) = 4.16$, $\underline{p} < .05$). Post hoc Scheffe tests revealed that teachers in the PARTICIPATORY group reported that they were more tolerant of verbal infractions than the MIXED group. However, no differences were apparent between any of the groups on the nonverbal index ($\underline{F}(2,61) = 0.31$, $\underline{p} > .05$).

Similarly, a significant difference between the kindergarten teacher groups was evident for the verbal index ($\underline{F}(2,61) = 8.01$, $\underline{p} < .001$). Post hoc Scheffe tests revealed that teachers in the PARTICIPATORY group reported that they were more tolerant of verbal infractions than both the MIXED and DIDACTIC groups. In addition, the omnibus ANOVA revealed group differences on the nonverbal index ($\underline{F}(2,61) = 3.15$, $\underline{p} = .05$), although the follow-up comparisons did not indicate any significant differences between the three teacher groups.

At the level of individual items, the preschool and kindergarten teacher rankings were quite comparable, although preschool teachers, in general, were more tolerant across the range of infractions. The teachers agreed upon the behaviors that were *not allowed*. These included: rough-housing, yelling, whining, not following directions, and playing alone. Concern was also expressed by most of the teachers for the following: shouting out answers, interrupting the teacher, not apologizing, not sharing classroom toys, and being excessively silly.

In summary, the results revealed general differences between preschool and kindergarten teachers for talking in their respective classrooms. All teachers reported that they encouraged talking to a greater extent during child-centered activities relative to those characterized as teacher-directed. Group differences were apparent in the teacher-directed activities with preschool teachers encouraging more talking than kindergarten teachers. And as expected, the teachers that permitted and even encouraged talking in teacher-directed activities (i.e., teachers with a pronounced PARTICIPATORY style) appeared to be more tolerant of verbal infractions than the teachers with a DIDACTIC or MIXED teaching style.

The findings of this study suggest the importance of considering the verbal dimension of child behavior when planning children's transitions from preschool to kindergarten. Not only do educational goals and styles of classroom management change between preschool and kindergarten, but so do teachers' expectations for verbal interaction. As a group, the kindergarten teachers in this study were less likely than preschool teachers to encourage children's verbal participation in the context of teacher-directed activities. Further, teachers near the encouraging end of their respective distributions, those characterized by a PARTICIPATORY teaching style, appeared to be more tolerant of verbal infractions than the teachers with DIDACTIC or MIXED styles. These important differences in teachers' tolerance for verbal infractions were apparent despite their similar expectations for nonverbal conduct.

The differences between preschool and kindergarten teachers' expectations for talking indicate that young children, in general, may need to make significant adjustments in their verbal behavior upon kindergarten entry. In general, kindergarten classrooms represent a more restrictive communicative environment, although the teachers in this study demonstrated considerable variability along this dimension. In the new setting, children are expected to control the nature and amount of their talking beyond what was expected of them in preschool. Children who are aware of this change in expectations, and have the linguistic capabilities to negotiate the change, are likely to manage the transition with little difficulty. However, some children may not recognize the new set of teacher expectations or may not understand the activities in which these expectations do and do not apply. Other children may not have the verbal interactive skills to participate successfully in large group interactions. For children in either of these latter groups, the transition to kindergarten may be more difficult.

One possible consequence of children's uncertainty of the rules for talking is that they may play it safe and not talk, particularly if they are often reprimanded for violating classroom rules such as talking out of turn or interrupting the teacher. As a consequence of using an overly conservative strategy, children who could benefit from the language learning opportunities afforded by child-centered activities might not receive the assistance that these classroom activities provide. It is, therefore, important that teachers be aware of the different verbal interactive demands presented by specific activities and of their own expectations and rules for interactions. It is then equally important that they explicitly share these rules with the children, highlighting the changes in the rules as they occur throughout the day.

The descriptive data obtained from the special education preschool teachers suggests that children with special needs may be expected to make greater adjustments when they enter mainstream kindergartens than children transitioning from many community-based preschools. The special education teachers appeared to show the least differentiation in the amount of talking encouraged between child-centered and teacher-directed activities. With the exception of *Story Time*, their mean ratings indicated that most of these teachers rarely discouraged talking during any classroom activity. In other words, there appeared to be greater encouragement for talking in general. Although this seems plausible, data from a larger sample of special educators is needed to determine the generalizability of this finding.

The special education teachers also appeared to be more tolerant of a number of the verbal behavioral infractions such as shouting out answers, interrupting, and dominating conversations. Although in some situations, these behaviors may be characterized as conversationally assertive, they are not likely to be allowed in many kindergarten classrooms. Yet, the special education teachers may have tolerated such behaviors because children with communication disorders tend to be passive or inactive conversationalists and demonstrate limited rates of verbal interaction (cf. Fey, 1986). These children are less likely to initiate verbal interactions, particularly with their peers and are also less conversationally responsive than their peers with age-appropriate language skills (Hadley & Rice, 1991; Rice, Sell, & Hadley, 1991). Consequently, the demonstration of what many teachers may consider to be violations of classroom rules may be perceived as progress by the special educator concerned with increasing children's conversational assertiveness.

2.3-4 Assess role of parent/teacher perceptions in transition success.

Over a three year period, semi-annual follow-up interviews were conducted with family members of 23 children with S/LI and 17 children whose language skills were developing normally. Parents of children with S/LI were interviewed throughout the course of the study. Parents of children with normal language skills were interviewed through kindergarten and first grade.

Information about the special services received by these children and their progression through elementary school is summarized in Tables 3 and 4. Sixty-one percent of the children with speech-language impairments followed the normal school progression. They began kindergarten the year they turned age five by September 1 and advanced one grade per year thereafter. Thirty-nine percent of children with speech-language impairments deviated from the normal progression. These children either repeated a year of programming; delayed kindergarten enrollment a year; or followed a two year alternative program sequence, such as language kindergarten/kindergarten or developmental first grade/first grade. The deviations from expected school progression occurred during the kindergarten or first grade transitions. One normal model (14%) experienced an atypical progression in first grade.

Of the children receiving speech therapy as preschoolers, 70% continued to receive speech therapy during at least one year of elementary school. Twenty-six percent of the children with speech-language impairments as preschoolers received other types of special services in elementary school. These services included occupational or perceptual-motor therapy, Chapter One services for reading or math, or psychological counseling. Of the normal models, one (6%) received special services in kindergarten and one (14%) received special services in first grade.

2.3-5 To develop transition intervention strategies for children with speech/language impairments.

The findings of Rice et al. (1991) and Hadley and Rice (1991) suggested the need for an intervention to facilitate S/LI children's initiations to peers. The intervention was to be implemented in LAP, a preschool based language intervention classroom, during center-time activities (e.g., dramatic play, art). Further, the intervention needed to be minimally intrusive to the on-going interactions in the classroom. Redirecting, an adult-implemented strategy hypothesized to facilitate peer initiations, was investigated. The redirect strategy was used with S/LI children who were more likely to initiate to adults than to peers. Redirects were implemented during regular classroom activities; there was not a separate training context for the children. In this way, we eliminated the need to generalize a behavior from a training context to the classroom.

A redirect consists of a verbal prompt suggesting the child initiate to a peer. Three types of redirects were identified: modeled, explicit, and hint. In a "modeled redirect", the adult provides the child with a specific utterance to use when initiating to a peer. For example, "Ask Mary if she can reach the glue for you. Say, 'I need the glue'". A modeled redirect is thought to be most appropriate for situations in which the child is not adept at formulating an utterance on his or her own. An "explicit redirect" is perhaps useful when the child need a 'push' to initiate to a peer. The adult tells the child what to do when initiating to a peer, but does not provide a specific utterance. For example: "You can't get out of there? Well you better ask Brian for help." The final type of redirect is a hint; the adult hints or indirectly suggests that the child initiate to a peer. For example: "I wonder if Ryan needs help washing the dog?"

Redirect Study I

This study was conducted in the Language Acquisition Preschool (LAP) at the University of Kansas during the fall and spring semesters of one academic year. Each semester was approximately 16 weeks long and there was a 4-week break between semesters. Four boys with S/LI were subjects in this study. In the fall, at the start of the study, the boys ranged in age from 3;10 to 5;3. Three of the boys were in LAP for their second year, one for his third. Upon entry into LAP, each child had been diagnosed as language-impaired by a certified speech-language pathologist. (See Rice, Sell, & Hadley, 1991 for enrollment criteria for LAP.) All of the children demonstrated intellectual abilities and had no history of a physical or visual disability, or a hearing loss.

The assistant teacher in LAP (henceforth referred to as 'the teacher') was chosen to implement the redirect strategy. She had a bachelor's degree in early childhood education and, at the time of the study, was completing course work to obtain certification in early childhood special education.

The study was conducted over the course of two semesters — a non-intervention semester (fall) and an intervention semester (spring). The chronological sequence of events in this study is as follows:

Nonintervention semester:

Weeks 5-6: Child pre-test on initiations (SICS)
Weeks 12-13: Child post-test on initiations (SICS)

Intervention Semester:

Weeks 1-2: Child pre-test of initiations (SICS)
Baseline on teacher redirects (RCS)
End of week 2: Teacher training on implementing redirects
Weeks 3 - 11: Intervention -- Teacher Redirects Initiations (RCS)
Week 12: Child post-test on initiations (RCS)

Over the course of the study, we were interested in documenting effectiveness at two levels. First, we were interested in the daily implementation and effectiveness of the redirect strategy during the 9 weeks of intervention. Toward this end, we collected data with the *Redirect Coding System* (RCS). Secondly, we wanted to document any generalized effects the redirect intervention phase had on altering children's patterns of interaction, specifically their spontaneous initiations to peers. This was addressed by calculating the proportion of initiations to peers from data collected with the *Social Interactive Coding System* (SICS) (Rice, Sell, & Hadley, 1990).

The *Redirect Coding System* (RCS) (see Appendix) was developed as an on-line coding system to record interactions between the target children and the target adult. Our primary intention was to develop a coding system that captured the frequency that a teacher redirected and target children's responses to redirects. All child and teacher turns were noted in interactions that began with an initiation from the target child to the teacher. Within these interactions, observers recorded: (1) initiations from any target child to the teacher; (2) the teacher's response to all subsequent child turns; (3) the target child's response to all teacher turns; and (4) the peer's response to the target child's redirected initiation. With respect to the second event, if the adult redirected the child, then the type of redirect was noted.

The teacher was trained by one investigator to implement the redirect strategy. Training was conducted after baseline data collection. The initial training occurred during one 2-hour session. The goal of the study was explained to the teacher. Verbal and written explanations of the redirect strategy were accompanied by video examples. Three levels of redirects were identified: modeled, explicit, and hint. Discussion also centered around variables to consider when redirecting children. For example, children might be redirected to nearby peers, to peers engaged in similar activities, and so forth. No specific instructions were provided on implementing prompted initiations. Rather, the investigator explained the differences between a prompted initiation and a redirect and indicated that the aim of the study was that she redirect children's initiations.

The findings from the initial study of redirects are presented following each of the study questions.

(1) Can a teacher be trained to redirect child initiations? That is, following a short inservice, will a teacher be able to redirect children's initiations?

The teacher rarely redirected children's initiations during the baseline week. Less than 1% of the target children's initiations were redirected. Thus, prior to training, the adult rarely used the redirect strategy. After the teacher training session, the teacher substantially increased her rate of redirecting children's initiations (see Figure 2). The average rate of redirects for the target children was 29%. The lowest rate of redirects occurred in week 6 of the study, 11%, and the highest rate, 55%, in week 10 of the study. Thus, the teacher training was successful in increasing the teacher's ability to redirect children's initiations.

The children varied in their frequency of initiations to the teacher. Nevertheless, the proportion of initiations redirected was quite similar ranging from .30 to .34 (mean of .32).

(2) When a child is redirected, is he or she likely to initiate to a peer?

Given that the teacher was able to redirect the children's initiations, we were interested in the target children's responses to the redirects. Child responses to redirects were divided into three categories: uptake, override, terminate, and no response (see Figure 3 for definitions and examples). Half of redirected initiations (57%) were responded to by an uptake; that is, after the adult redirected, the child then initiated to a peer. This was the desired response from the child. An override occurred when a child verbally continued the conversation but did not respond to the redirect per se. Twenty-seven percent of the redirects received an override response.

(3) As a teacher increases the proportion of a child's initiations that redirected, does the child likewise increase the frequency with which he or she then initiates to a peer?

It is possible that despite the number of redirects the child receive, the child could have responded with an uptake only once or twice a week or even never. However, we found that as the frequency of redirects increased, the target children likewise increased the frequency of uptakes (see Figure 4). The top line represent the weekly frequency of redirects and the lower line indicates the frequency of redirects that were followed by an uptake. The lower line shadows the upper line, indicating that as redirects increased, the frequency of uptakes also increased.

(4) What is the peer's response to the redirected child initiation?

In general, the peers' responses to the children's redirected initiations were positive. We divided peer responses into 4 categories: acknowledge; neutral; reject; or no response (see Figure 3 for definitions and examples). When the target children initiated to a peer following a redirect, they were most likely to receive a conversationally appropriate response from the peer.

(5) Is a period of redirecting a child's initiations associated with gains in spontaneous initiations?

Proportion of peer initiations was calculated four times: pre- and post measures in the nonintervention semester as well as the intervention semester. The mean proportion of peer initiations was unchanged during the non-intervention semesters (pre-test M=.40 (SD=.075; post-test M=.40 [SD=.237]). However, there was an increase in mean proportion of peer initiations associated with the intervention semester (pre-test M=3.58 [SD=.131] and post-test M=.59 [SD=.143]). The post-intervention mean was significantly different that the pre-intervention mean ($F_{(1,3)}$= 9.87, p=.05). Thus, the intervention procedure was associated with an increase in the proportion of peer initiations from the beginning of the semester to the end of the semester. Individual change across the intervention semester indicated that three of the subjects substantially increased their proportion of peer initiations (M increase: .32) whereas one subject only increased his proportion .03. Importantly, the subject who demonstrated the least change began the intervention semester with the highest proportion of peer initiations (.50). See Figure 5.

Three broad questions were addressed in this study. First, was training the teacher effective in increasing her ability to redirect children's initiations? Second, are redirects effective; that is, did the children initiate to a peer when their initiation to the teacher was redirected? Third, were the weeks of intervention effective in increasing the proportion of children's spontaneous initiations to peers?

Baseline teacher data indicated that the teacher rarely redirected. This suggests that redirects were not a consciously used strategy to get children to initiate to her peers. Rather the occurrence of a redirect was unintentional. However, after training, the teacher steadily increased her redirects although the proportion of initiations redirected fluctuated daily and from week to week. In sum, the results of the study demonstrated that training was effective in increasing the teacher's ability to redirect children's initiations.

The teacher in this study reported to us during the study and again at the conclusion, that redirecting the children's initiations was not necessarily something that came easily. She found that she had to consciously think about what she was doing, though this heightened her awareness as to what the entire group of children around her was doing. For example, as she implemented the redirects, she realized that it was easier to redirect a child if she had an idea beforehand of where she might redirect that child. Hence, she found herself checking out what the other children around her were doing and locating children who might be receptive to the initiation of another child. One difficulty she reported in implementing the redirects was that she sometimes felt she was "pushing children away." This latter comment calls to attention teachers' assumptions about what constitutes valuable conversational exchanges. Perhaps there is a sense that adult-child conversation is more valuable in the language learning process than child-child conversation. In actuality, children probably benefit from a balance of both.

The teacher's daily implementation of redirects was successful in that more than half the teacher's redirects resulted in a target child initiating to a peer. Further, as the teacher increased her frequency of redirects, the child likewise increased his frequency of uptakes. It was not the case that the children continually responded to the redirects at some minimal frequency. Hence, during intervention, the redirects were effective in eliciting initiations to peers.

The last issue in this study was the extent to which the redirect strategy was associated with increases in the proportion of spontaneous initiations to peers that were directed to peers. An answer to this question is confounded by two factors. Prompted initiations as well as redirects increased after the redirect teacher training. (In contrast to a redirect, a prompted initiation was a teacher prompt that did NOT follow a child's verbal initiation to the adult.) Second, the target children were as likely to initiate to a peer following a redirect as following a prompted initiation. Thus, it is not possible to specifically discuss the effect of the redirects on the proportion of peer initiations. Rather, the effects must be viewed as effects of redirects and prompted initiations. However, we believe that the teacher training may have heightened the teacher's awareness to child's desire to communicate, whether that desire was expressed verbally or nonverbally.

Across the four children there was minimal change in the proportion of peer initiations in the nonintervention semester but much greater change in the intervention semester. Individually, three of the four children demonstrated gains in their proportion of peer initiations during the intervention semester. The mean change in the proportion of peer initiations in the intervention semester was significant. The introduction of redirects by the teacher was associated with a gain in the mean proportion of initiations addressed to peers. This gain can be interpreted as a generalization of the teaching technique to situations in which a teacher is not necessarily present.

Redirect Study II

A replication study was planned following a review of the first study in consultation with Samuel Odom, Ph.D. in the summer of 1992. The replication study involved a new assistant teacher and two additional children, who were three years of age and in their first year of LAP at the time of the study. The study was conducted in the second semester of the school year, and thus, the children were familiar with their classmates and the routines of the classroom. Both children had expressive language problems, as documented by the Reynell and MLU calculated from a language sample. One of the children had receptive language deficits and articulation deficits as well.

The study was conducted in a similar manner to the first study, with a few exceptions. The study extended over one semester. In addition to pre- and post-intervention measures with SICS, spontaneous initiations were tracked on a daily basis to determine the daily and weekly effects of the intervention on the proportion of peer initiations. This additional measure necessitated adapting the RCS coding system in Fall, 1992.

The preliminary results of this study indicated replication of some findings. The teacher was successfully trained to implement redirects, and the subjects responded to the teacher's redirects by initiating to a peer. However, unlike the previous study, there was no change with these subjects in their proportion of spontaneous initiations to peers from the beginning of the study to the end. Whereas, there was fluctuation over the semester for peer initiations for the children, no consistent increase in proportion of peer initiations could be discerned. A preliminary explanation of the differences in findings in the replication study suggested that the younger age of the children, their lower language levels, or their lesser experience with peers may be explanatory factors.

IMPACT

It appears that speech/language impaired children experience difficulty in verbal interactions with their peers from a very early age. This reluctance to participate may put them at risk for external judgments of social immaturity, as well as additional aspects of social and linguistic development which are played out in the context of verbal exchanges. The preschool years are when differences in verbal interactions become apparent and are therefore a crucial time to establish effective uses of communication skills as a means of enhancing peer relations. Without appropriate interactive skills, speech/language impaired children are risk for success in kindergarten classrooms.

Preschool children with speech/language impairment as their primary handicapping condition most often transition into typical or mainstream kindergarten classrooms. Thus, preschool interventions must prepare children with SLI for the academic, social, and verbal demands of the regular kindergarten classroom. An underlying assumption in the studies undertaken in this project is that verbal interactive skills are a critical component in a child's preparedness for school. Moreover, for children with communicative impairments, verbal interactive skills are a likely area of vulnerability. Several findings from the studies conducted in this project are important for the field of early intervention.

Children with S/LI as preschoolers rely on adults as communicative partners in their verbal interactions. As they transition to kindergarten, where the availability of adult partners is less, these children are likely to suffer negative consequences. Children with S/LI may not experience full participation in social interactions with their peers and this may give rise to three possible consequences. They may experience reduced opportunities to practice and develop their language skills. Their lack of verbal interactions with peers may be subject to misinterpretation, for example, being judged less mature or shy. Such misinterpretation might lead to academic misplacement, for example, a child being retained for immaturity. Longitudinal evaluations of children with S/LI (e.g., Aram & Nation, 1984) suggest that language impairment is not a transient phenomenon but rather can be a life long condition.

A child's willingness to initiate interactions with other children can be a crucial skill. Within this perspective, the preschool classroom can become a social buffer for a child who is working out the intricacies of speech and language. In this setting, the child can be encouraged to develop the interactive competencies, as well as grammatical structures, that are crucial for success upon school entry. The confidence to initiate interactions in kindergarten would provide a child with a strategy to help maintain the speech and language gains of preschool intervention. At the same time, if the kindergarten teacher is aware of the proclivity of the speech/language impaired child to retreat from interactions, and the negative consequences of this proclivity, he or she can make some minor accommodations in the setting to encourage child-child interactions, and the probability of success on the part of the speech/language impaired child.

The findings from the SLAS suggest that this instrument can be a valuable tool in the assessment process and on-going determination of progress for children with S/LI.

The Speech and Language Assessment Scale is a field-tested, reliable and valid tool that can be used to help parents describe their child's speech and language competencies. Clinicians can use this instrument in a variety of ways. First, they can use it as a way of evaluating the likely validity of the formal speech and language assessments. If there are great discrepancies between parent report and the clinician's findings, the discrepancy bears further examination. Second, the SLAS can be used to facilitate a collaborative relationship between parents and clinicians during IEP planning. Providing parents with an instrument such as the SLAS to complete prior to the IEP conference may enable parents to come to the conference with more specific questions and comments about their child's communicative competencies and participate more fully in the IEP process. Third, the SLAS can be used to review where differences are apparent between parents and clinicians. These discussions can provide important opportunities for parents to inform clinicians about their children's competencies during dinnertime or bedtime routines or when being introduced to new people or in other everyday contexts. In addition, clinicians can use this opportunity to describe their observations of children's verbal interactive skills in the preschool classroom or educate parents about the aspects of semantic or syntactic development that they are particularly concerned about. Fourth, the SLAS could be used as a measure of parent satisfaction with their child's progress in the intervention program. By completing the SLAS at periodic intervals, parents and clinicians can review where the children have made the greatest gains and where little progress was noted. Finally, clinicians should recognize that parents differ in their levels of interest in the process of ongoing assessment. Sheehan (1988) recommended that the degree of parental involvement must be tailored to the individual parent's expressed interest. The point here is that clinicians should provide parents with a means to increase their involvement, if they so choose, not to burden the parents with just another form to complete. Bearing these thoughts in mind, we believe that the SLAS is a clinically useful tool that can help parents and clinicians work together to provide better services to children with communicative disorders and their families.

The findings from the TAS survey raise a number of important issues for future research. Clearly, it will be necessary to examine whether or not teachers' attitudes toward talking are reflected in their daily teaching practices. Further observational research is necessary to validate the teaching styles identified in this study (e.g., PARTICIPATORY vs. DIDACTIC) as well as to examine the relation between teaching style and teacher expectations for verbal conduct more explicitly. It is possible that teacher expectations and their reactions to verbal infractions in the classroom may only be weakly correlated. However, it is also possible that individual differences in the amount of talking teachers encourage might be more apparent during classroom observations than in response to survey items. Additional information is also needed to examine how teachers respond to verbal infractions in classroom situations. We do not mean to suggest that teachers should be overly permissive and tolerate the verbal infractions identified on this survey. Rather, it will be important to determine if teachers provide clear feedback that allows children to identify the contextual factors that influence their teachers' expectations for verbal behavior. That is, do teachers provide explanations for why it is inappropriate to talk in a particular situation or in a particular manner and assist children in identifying the salient features of a given situation, or do they merely state that talking is not allowed? Finally, characteristics of kindergarten classroom placements that facilitate early academic success (e.g., promotion to first grade) for children with communication limitations should be explored. We have suggested that transitions to kindergarten classrooms with teachers that promote and encourage the use of oral language skills may be easier for these children, and in turn, may foster a more positive early academic experience. This possibility warrants further investigation. This study represents only a first step toward understanding the role of teacher expectations for verbal interaction in children's transitions from preschool to kindergarten. The implications of these expectations upon smooth transitions and subsequent academic success during early childhood remain an important agenda for future educational research.

The information obtained from parents on their children's transitions from LAP into the early elementary years is consistent with previously reported studies (e.g., Aram, Ekelman, & Nation, 1984; Aram & Hall, 1984). Almost two-thirds of children with S/LI, despite receiving preschool intervention services, received some sort of academic support or special services in the early elementary years. Speech/language impairments generally are not transient problems for young children. Rather, for many children diagnosed as S/LI , language difficulties persist throughout the lifespan, affecting social, academic, and vocational functioning. Children's early intervention services and transitions are likely to be enhanced when these issues are considered beginning at preschool.

The redirect studies suggest that this intervention measure can be implemented as part of a classroom-based intervention program to increase the likelihood that children will initiate to their peers. Classroom teachers or SLPs can be trained in a period of a few hours to implement redirects. Redirects are minimally intrusive to the ongoing interactions in a child-directed intervention classroom and can be implemented with children with S/LI as well as children developing language normally. Children are likely to respond to a redirect by initiating to a peer, and thus the procedure was found to be successful in increasing peer initiations. A pilot study of preschool teachers suggested that this is not a strategy that teachers implement as a matter of course in interacting with preschool children. This was true whether the classroom consisted of all normally developing children or included children with special needs.

RECOMMENDATIONS

- Investigate further the role of verbal interactions of children with S/LI in classroom social participation, including self-contained classrooms and full inclusion classrooms.
- Investigate the effectiveness of redirects in preschool intervention classrooms with other populations of children with special needs.
- Evaluate the effectiveness of redirects in facilitating kindergarten children's social interactions.
- With direct observations, investigate the expectations for verbal social interactions in preschool and kindergarten classrooms.
- Evaluate preschool and kindergarten teacher's expectations regarding social verbal interactions when considering academic placement of children.
- Investigate various strategies for gathering and using input from parents, teachers and SLPs in the development of IEPs (goal setting, intervention options) for children with S/LI.

REFERENCES

Rice, M.L., Sell, M.A., & Hadley, P.A. (1990). The social interactive coding system: A clinically relevant, on-line descriptive tool. Language, Speech and Hearing Services in Schools, 21, 2-14.

Rice, M.L., Sell, M.A., & Hadley, P.A. (1991). Social Interactions of Speech and Language Impaired Children. Journal of Speech and Hearing Research, 34, 1299-1307.

OSEP Report to Congress (1988).

Hohman, M., Banet, B., & Weikart, D.P. (1978). Young Children in Action. Yipsilanti, MI: High Scope Press.

Fey, M. (1986). Language Intervention With Young Children. Boston, MA: College-Hill Press, Inc.

Hains, A.H., Fowler, S.A., Schwartz, I.S., Kottwitz, E., & Rosenkoetter, S. (1989). A Comparison of Preschool and Kindergarten Teacher Expectations for School Readiness. Early Childhood Research Quarterly, 4, 75-88.

Catts, H. (1990). Kansas Early Childhood Research Institute Continuation Proposal, Project 3.2. Unpublished report. Life Span Institute, University of Kansas, Lawrence.

Rice, M.L., Hadley, P.A., & Alexander, A. (1990). Teacher Attitudes Towards Speech and Language Impaired Children. Project underway, University of Kansas, Lawrence.

Hadley, P.A., Rice, M.L., & Wilcox, K.A. (in preparation). Reliability and Validity of the Speech and Language Assessment Scale.

Hadley, P.A., & Rice, M.L. (1991). Conversational Responsiveness in Speech- and Language-Impaired Preschoolers. Journal of Speech and Hearing Research, 34, 1308-1317.

Weinberg, A.M. (1991). Construct Validity of the Speech and Language Assessment Scale: A tool for recording parent judgements. Unpublished master's thesis. Department of Speech-Language-Hearing, University of Kansas, Lawrence.

Reynell, J.K. (1985). Reynell Developmental Language Scales-Revised. Windsor, England: Nfer-Nelson.

Dunn, L.M., & Dunn, L.M. (1981). Peabody Picture Vocabulary Test-Revised. Circle Pines, MN: American Guidance Service.

Goldman, R., & Fristoe, M. (1986). The Goldman-Fristoe Test of Articulation. Circle Pines, MN: American Guidance Service.

Kaufman, A.S. & Kaufman, N.L. (1983). Kaufman Assessment Battery for Children. Circle Pines, MN: American Guidance Service.

Nass, J.F., Watts, R.C., Grisson, J.M., & Oshrin, S.E. (1981). Mothers, Father, and Teachers as Informants on an Indirect Communicative Assessment Measure. Language, Speech, and Hearing Services in Schools, 12, 188-191.

Fowler, S.A. (1982). Transitions from Preschool to Kindergarten for Children with Special Needs. In K.E. Allen & E.M. Geotz (Eds.), Early Childhood Education: Special Problems-Special Solutions, 309-333. Rockville, MD: Aspen.

Aram, D.M., & Nation, J.E. (1980). Preschool Language Disorders and Subsequent Language and Academic Difficulties. Journal of Communication Disorders, 13, 159-179.

Aram, D.M., Ekelman, B.L., & Nation, J.E. (1984). Preschoolers with Language Disorders: 10 Years Later. Journal of Speech and Hearing Research, 27, 232-244.

Rice, M.L., Hadley, P.A., & Alexander, A.L. Social Biases Toward Children with Speech and Language Impairments: A correlative causal model of language limitations. Paper currently under review.

TABLE 1

Individual Items contained in Composite Scales

Scale		Items
ASSERTIVENESS	1.	asks questions properly
	11.	gets what (s)he wants by talking
	12.	starts conversation with peers
RESPONSIVENESS	2.	answers questions properly
	13.	keeps conversations going with peers
SEMANTICS	5.	number of words known
	6.	uses words properly
	10.	uses proper words when talking
SYNTAX	14.	length of sentences
	15.	makes "grown-up" sentences
ARTICULATION	4.	says sentences clearly
	7.	gets message across when talking
	16.	says sounds in individual words correctly

TABLE 2

Composite Scale Means by Language Group and Rater

Composite Scale	ND Group		SLI Group	
	Parents	SLP	Parents	SLP
Assertiveness	5.50 (.97)	5.17 (1.18)	3.63 (1.11)	2.47 (1.39)
Responsiveness	5.20 (.93)	5.14 (1.23)	3.51 (.98)	2.42 (1.40)
Semantics	5.38 (.88)	4.95 (1.19)	3.39 (.72)	2.60 (1.05)
Syntax	5.45 (1.08)	5.04 (1.39)	3.19 (1.11)	2.38 (1.20)
Articulation	5.20 (1.02)	5.03 (1.38)	2.87 (1.12)	2.50 (1.24)

TABLE 3

Services Received and Educational Progression
Longitudinal Data (Children with Speech-Language Impairments)

Services Received	Number of Children	Percentage
Total Number of Children	23	100%
No special services	7*	30%
Speech Therapy	16	70%
Other special services	6**	26%
OT/Perceptual Motor	3	13%
Chapter One: Reading	2	9%
Chapter One: Math	2	9%
Psychological Counseling	1	4%

Educational Progression	Number of Children	Percentage
Total Number of Children	23	100%
Normal progression	14	61%
Atypical progression	9	39%
Retained	2	9%
Chose alternate sequence	3	13%
Delayed kindergarten	4	17%

*One child attended Developmental First Grade

**One child currently being evaluated for Learning Disabilities

TABLE 4

Services Received and Educational Progression
Cross-sectional Data

Grade	Total*	No Special Services	Speech	Other Services	Atypical Progression
Preschool**	4 Children	50% (2)	50% (2)	50% (2)	100% (4)
Kindergarten (SLI)	24 Children	25% (6)	71% (17)	21% (5)	17% (4)
Kindergarten (NM)	17 Children	94% (16)	0	6% (1)	0
Grade 1 (SLI)	16 Children	44% (7)	56% (9)	19% (3)	13% (2)
Grade 1 (NM)	7 Children	86% (6)	0	14% (1)	14% (1)
Grade 2 (SLI)	11 Children	36% (4)	64% (7)	18% (2)	0
Grade 3 (SLI)	5 Children	20% (1)	80% (4)	0***	0
Grade 4 (SLI)	2 Children	50% (1)	50% (1)	0	0

SLI = Child with a speech-language impairment
NM = Child whose speech and language skills are developing normally

*Children repeating a grade are counted twice
**Delayed kindergarten enrollment by one year
***One child currently being evaluated for having learning disabilities

FIGURE 1

Date: ________

Class size: ____

TALKING AT SCHOOL

In order to learn about what you expect of the children in your classroom, we would like additional information about when talking is encouraged and discouraged during your daily activities. We are also interested in what classroom behaviors you are most concerned with. We appreciate the time you have taken to complete this survey.

Please indicate how you feel about children talking with each other during each of the following classroom activities.

	not allowed		permitted		encouraged	N/A
1. arrival	1	2	3	4	5	___
2. calendar time	1	2	3	4	5	___
3. sharing time	1	2	3	4	5	___
4. center time	1	2	3	4	5	___
5. clean-up	1	2	3	4	5	___
6. recess	1	2	3	4	5	___
7. snack time	1	2	3	4	5	___
8. story time	1	2	3	4	5	___
9. math centers	1	2	3	4	5	___
10. large group activities	1	2	3	4	5	___
11. closing activities	1	2	3	4	5	___
12. other ________	1	2	3	4	5	___

(FIGURE 1, continued)

We understand that many situational factors influence your responses to your students' behaviors. With this acknowledged, please indicate your general feelings about these classroom behaviors.

not allowed		sometimes may		permitted	
1	2	3	4	5	N/A

___ talking out of turn.
___ getting out of line.
___ not answering questions from **peers**.
___ not answering questions from **adults**.
___ fidgeting during large group activities.
___ whispering to neighbors.
___ rough-housing in the classroom.
___ interrupting when you are involved with another child.
___ not sharing **personal** toys/materials.
___ not sharing **classroom** toys/materials.
___ talking during classroom transitions.
___ shouting out answers during large group activities.
___ not apologizing.
___ verbally dominating large group activities.
___ making comments irrelevant to the subject/topic.
___ being extremely shy.
___ prefering to play alone rather than with peers.
___ not following directions from adults.
___ whining.
___ yelling across the classroom during less-structured activities.
___ leaning back on chair legs.
___ not using courtesy words.
___ sprawling on the floor, rather than sitting correctly.
___ constantly asking the teacher for help.
___ being excessively silly.

FIGURE 2

Redirected Child Initiations

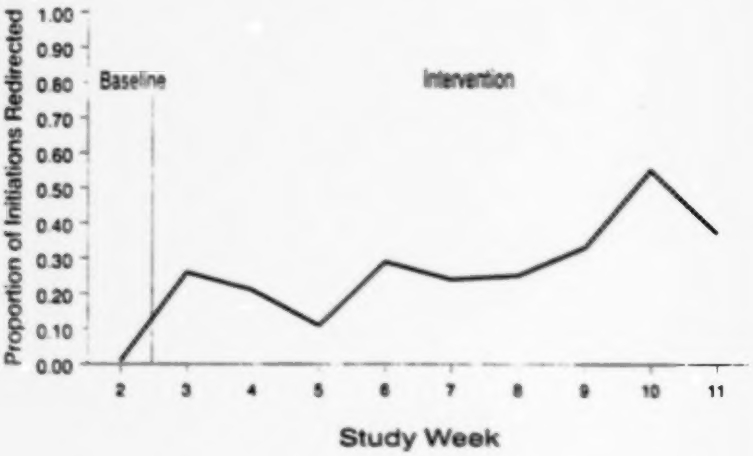


FIGURE 3

REDIRECT CODING SYSTEM
Definitions of Codes

Adult Codes:

RDW (redirect, direct, provide words): adult redirects child's initiation by providing the child with the words s/he might use when initiating to the peer.

Example: "Tell Mary, It's my turn."

RD (redirect, direct): adult redirects by specifically telling the child what s/he might do but not providing the child with the specific words to use.

Example: "Tell Johnny that you want the truck."

RD+ (redirect, direct): the adult uses several of the above type of utterance, without intervening child turns and/or the adult provides some added assistance to ensure that the child 'uptake' on the redirection (e.g., turning the child toward a peer, showing where the peer is).

Example: "Maybe you can ask Billy to cook that fish with you. Ask Billy. He's over by the pond. Go ahead and ask Billy to cook with you."

RI (redirect, indirect): adult redirects by suggesting in an indirect or hinting manner that the child initiate to a peer. The child might just as easily interpret this type of redirection as a comment by the adult to respond to.

Examples: "Hmm, William might like to see that book."
"You gonna eat with Andre?"

R (response): In response to the child's initiation the adult provides an appropriate response but does not redirect the initiation.

NR (no response): the adult ignores or otherwise does not respond to the child's initiation.

Child Codes:

I (initiate): the child verbally initiates to an adult. Initiation can be a one-word or multi-word utterance.

Example: Child: Do you want a pizza? (I)

R (response): the child responds to an adult response. The previous adult turn is an R.

U (redirect uptake): the child follows the adult's redirection by initiating to a peer

Example: Child: Do you want a pizza?
Adult: No, but you might ask Joey if he wants one. (RI)
Child: Joey, want a pizza? (U)

O (conversational override): child ignores the adult's redirection and instead continues the conversation with the adult. If appropriate, the adult can try to redirect the child's subsequent utterance.

Example: Child: Do you want a pizza?
Adult: No, but you might ask Joey if he wants one. (RI)
Child: You owe me five dollars. (O)

T (termination): the child overtly rejects the adult's redirection. This could be either verbal or nonverbal. In either case the adult does not have a second opportunity to redirect and must wait again until the child initiates to the adult.

Example: Child: Do you want a pizza?
Adult: No, but you might ask Joey if he wants one. (RI)
Child: No, this pizza is for you not Joey. (T)

Peer codes:

A (acknowledge): the peer acknowledges/affirms/recognizes child's initiation by responding in a conversationally appropriate manner to the child's initiation either verbally or nonverbally.

Example Child: Do you want a pizza? (I)
Adult: No, but you might ask Joey if he wants one. (RI)
Child: Joey, want a pizza? (U)
Peer: Yea, let's eat it. (A)

R (reject): the peer overtly rejects the child's initiation either verbally or nonverbally. This type of response is a rejection of the child, not just a rejection of the initiation.

Example: Child: Do you want a pizza? (I)
Adult: No, but you might ask Joey if he wants one. (RI)
Child: Joey, want a pizza? (U)
Peer: I'm not playing with you. (R)

N (neutral): the peer does not respond in any way to the child's initiation

Example: Child: Do you want a pizza? (I)
Adult: No, but you might ask Joey if he wants one. (RI)
Child: Joey, want a pizza? (U)
Peer: [does not look at or acknowledge child] (N)

FIGURE 4

Redirects and Uptakes

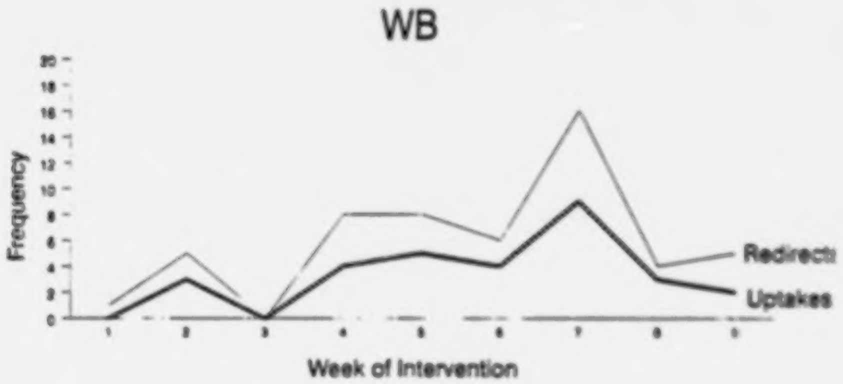
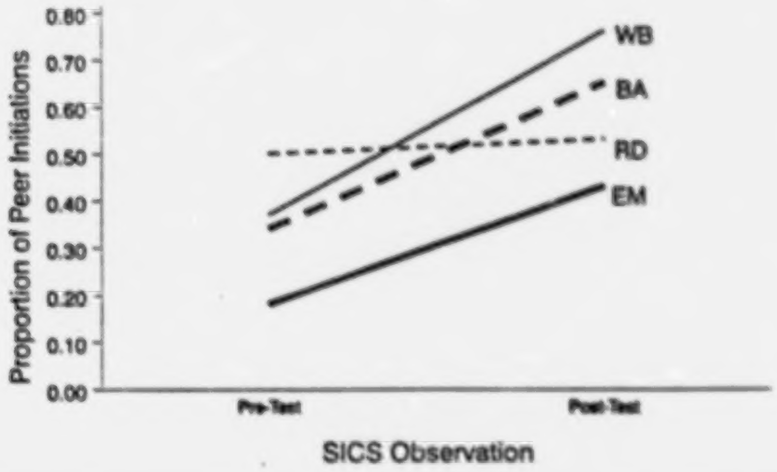


FIGURE 5

Intervention Changes in Peer Initiations



ID ________ Date ________

FIGURE 6

FOLLOW-UP LAP INTERVIEWS

Child's Name ______________________________ Grade __________

School ______________________ Teacher ______________________

Person Interviewed ______________________________________

How has (Your Child) adjusted to:

the classroom ______________________________________

____

____

with school work ______________________________________

____

____

with the teacher ______________________________________

____

____

with friends in the classroom ____________________________

____

____

with transportation ______________________________________

____

____

What type of contact do you have with your child's classroom teacher? And how often?

____

____

____

Follow-up Interview Form
Language Acquisition Preschool, 10/93

ID ________ Date ________

Is your child receiving special services such as speech-language therapy or Chapter One Services? YES NO

If YES:

What type? ____________________

In what setting? ____________________

How often? ____________________

What type of contact do you have with the school about these services? And how often?

____

____

Tell me about the coordination and communication between the people providing special services to your child and your child's teacher. (Or between the school and outside agencies.)

____

____

____

Describe an IEP conference ____________________

____

____

____

Who was there? ____________________

____

How was it scheduled? ____________________

____

Who talked the most? ____________________

____

Did you feel your opinion was valued and why? ____________________

____

FIGURE 7

CAROLINA PARENT SUPPORT SCALE - SF

Below is a list of people or services which may or may not be helpful to you. In this rating think only of how helpful each of them is in making your job as the parent of a child with special needs easier. They may help you in any way. For example, they may help take care of your child. They may give you useful information or services. They may just give you understanding and support.

For each item, please circle the answer that shows how helpful that person or service is to you. The more helpful they are, the higher the number you should circle. If they are not available for you now, circle NA. If they are available in your area, but you have no contact with them, circle NC.

There are no right or wrong answers. Please mark how helpful they really are to you, not how helpful you think they should be.

NA = Not Available
NC = Available, but no contact with them

		NOT AT ALL HELPFUL	SOMEWHAT HELPFUL	MODERATELY HELPFUL	QUITE HELPFUL	EXTREMELY HELPFUL
1. Husband (or wife)	NA NC	0	1	2	3	4
2. My relatives	NA NC	0	1	2	3	4
3. My husband's (or wife's) relatives	NA NC	0	1	2	3	4
4. My own children	NA NC	0	1	2	3	4
5. Friends	NA NC	0	1	2	3	4
6. Other parents of children with special needs (informal)	NA NC	0	1	2	3	4
7. Parent group for parents of special children	NA NC	0	1	2	3	4
8. Neighbors	NA NC	0	1	2	3	4
9. Babysitter	NA NC	0	1	2	3	4
10. Medical doctor	NA NC	0	1	2	3	4
11. Church or synagogue	NA NC	0	1	2	3	4
12. (Name of Program) educational program for child	NA NC	0	1	2	3	4

Bristol, 1978, revised 1981, 1983, UNC-Chapel-Hill
Adapted, with permission from Bronfenbrenner,
Avgar, & Henderson, 1977. May, 1983 version.

FIGURE 8

ID ________ Date ________

PARENT SURVEY

Parents of young children have many different needs. Not all parents need the same kinds of help. For each of the needs listed below, please check the space that best describes your need or desire for help in that area. Although we may not be able to help you with all your needs, your answers will help us understand things that are important to parents of young children.

Family Need	I really need some help in this area	I would like some help, but my need is not that great	I don't need any help in this area
Someone who can babysit for a day or evening so I can get away.			
Better medical care for my family.			
More information about child development.			
More money/financial help.			
More information about child care.			
Someone who can watch my child after school.			
Someone I can talk to about my problems with raising my child.			
More information about behavior problems.			
A bigger or better house or apartment.			
More information about nutrition or feeding.			
Problems with relatives/friends/neighbors.			
More friends who have children my child's age.			
A car or other form of transportation.			
More time for myself.			
Problems with my spouse.			
More time to be with my child.			
Improving my education or skills.			
Toys for my child.			
Time to keep in shape and look nice.			
More information about household safety.			
Help in dealing with stress.			

Language Acquisition Preschool, 10/93
Adapted from Seligman & Darling (1989).

FIGURE 9

LANGUAGE ACQUISITION PRESCHOOL
Speech and Language Assessment Scale
To be completed by Parent

Name:______________________________ Child's Name:___________________

Date:______________________________

Parents: Please rate your child's language and social skills compared to other children his or her own age.

Comments:

1. My child's ability to **ask** questions properly is:

1	2	3	4	5	6	7
very low			normal for age			very high

2. My child's ability to **answer** questions properly is:

1	2	3	4	5	6	7
very low			normal for age			very high

3. My child's ability to understand what others say to him/her is:

1	2	3	4	5	6	7
very low			normal for age			very high

4. My child's ability to say sentences clearly enough to be understood by strangers is:

1	2	3	4	5	6	7
very low			normal for age			very high

5. The number of words my child knows is:

1	2	3	4	5	6	7
very low			normal for age			very high

6. My child's ability to use his/her words correctly is:

1	2	3	4	5	6	7
very low			normal for age			very high

7. My child's ability to get his/her message across to others when talking is:

1	2	3	4	5	6	7
very low			normal for age			very high

8. My child's ability to understand directions spoken to him/her is:

1	2	3	4	5	6	7
very low			normal for age			very high

(Over)

Comments:

9. My child's ability to follow directions spoken to him/her is:

1	2	3	4	5	6	7
very low			normal for age			very high

10. My child's ability to use the proper words when talking to others is:

1	2	3	4	5	6	7
very low			normal for age			very high

11. My child's ability to get what he/she wants by talking is:

1	2	3	4	5	6	7
very low			normal for age			very high

12. My child's ability to start a conversation, or start talking with other children is:

1	2	3	4	5	6	7
very low			normal for age			very high

13. My child's ability to keep a conversation going with other children is:

1	2	3	4	5	6	7
very low			normal for age			very high

14. The length of my child's sentences is:

1	2	3	4	5	6	7
very low			normal for age			very high

15. My child's ability to make "grown up" sentences is:

1	2	3	4	5	6	7
very low			normal for age			very high

16. My child's ability to correctly say the sounds in individual words is:

1	2	3	4	5	6	7
very low			normal for age			very high

17. My child's awareness of differences in the way people act, speak, dress, etc. is:

1	2	3	4	5	6	7
very low			normal for age			very high

18. My child usually speaks:

1	2	3	4	5	6	7
too soft			about loud enough			too loud

19. My child usually speaks:

1	2	3	4	5	6	7
not often enough			about often enough			too often

FIGURE 10

LANGUAGE ACQUISITION PRESCHOOL
Speech and Language Assessment Scale

Rater's Name: ______________________ **Child's Name:** ______________________

Date: ______________________ **School:** ______________________

Relationship to Child: ______________________

Please rate this child's language and social skills compared to other children his or her own age.

Comments:

1. This child's ability to **ask** questions properly is:

1	2	3	4	5	6	7
very low			normal for age			very high

2. This child's ability to **answer** questions properly is:

1	2	3	4	5	6	7
very low			normal for age			very high

3. This child's ability to understand what others say to him/her is:

1	2	3	4	5	6	7
very low			normal for age			very high

4. This child's ability to say sentences clearly enough to be understood by strangers is:

1	2	3	4	5	6	7
very low			normal for age			very high

5. The number of words this child knows is:

1	2	3	4	5	6	7
very low			normal for age			very high

6. This child's ability to use his/her words correctly is:

1	2	3	4	5	6	7
very low			normal for age			very high

7. This child's ability to get his/her message across to others when talking is:

1	2	3	4	5	6	7
very low			normal for age			very high

8. This child's ability to understand directions spoken to him/her is:

1	2	3	4	5	6	7
very low			normal for age			very high

(Over)

Comments:

9. This child's ability to follow directions spoken to him/her is:

1	2	3	4	5	6	7
very low			normal for age			very high

10. This child's ability to use the proper words when talking to others is:

1	2	3	4	5	6	7
very low			normal for age			very high

11. This child's ability to get what he/she wants by talking is:

1	2	3	4	5	6	7
very low			normal for age			very high

12. This child's ability to start a conversation, or start talking with other children is:

1	2	3	4	5	6	7
very low			normal for age			very high

13. This child's ability to keep a conversation going with other children is:

1	2	3	4	5	6	7
very low			normal for age			very high

14. The length of this child's sentences is:

1	2	3	4	5	6	7
very low			normal for age			very high

15. This child's ability to make "grown up" sentences is:

1	2	3	4	5	6	7
very low			normal for age			very high

16. This child's ability to correctly say the sounds in individual words is:

1	2	3	4	5	6	7
very low			normal for age			very high

17. This child's awareness of differences in the way people act, speak, dress, etc. is:

1	2	3	4	5	6	7
very low			normal for age			very high

18. This child usually speaks:

1	2	3	4	5	6	7
too soft			about loud enough			too loud

19. This child usually speaks:

1	2	3	4	5	6	7
not often enough			about often enough			too often

4-3-89

PROJECT 3.1

PROGRAMMING SUCCESSFUL CLASSROOM TRANSITIONS: ASSESSMENT OF CHILDREN'S SURVIVAL SKILLS AND CLASSROOM REQUIREMENTS

Judith J. Carta, Ph.D., Juniper Gardens Children's Project
Jane B. Atwater, Ph.D., Juniper Gardens Children's Project
Charles R. Greenwood, Ph.D., Juniper Gardens Children's Project

TARGETED TRANSITION PROBLEM

To investigate the measurement of classroom survival skills in young children with and without disabilities and to assess aspects of classroom structure and teacher behavior that influence the skills needed by children.

OBJECTIVES

3.1-1 To develop an observation instrument that measures classroom survival skills across preschool and primary level classrooms that will serve young children with disabilities.

3.1-2 To establish the reliability of the classroom survival skills observational instrument based upon a sample of preschoolers with and without disabilities in a variety of classroom settings.

3.1-3 To establish the validity of the proposed observation instrument based upon a sample of preschoolers and their performance on this and other measures in preschool, kindergarten, and first grade.

3.1-4 To conduct discrepancy analyses of target students' level of survival skills functioning in their preschool setting and the level of functioning exhibited by high and low functioning students in classrooms where the target students are expected to be placed.

BACKGROUND

Children with developmental delays and disabilities often have considerable difficulty transferring what they have learned to the unfamiliar activities, settings, people, and routines of a new program (Anderson-Inman, Walker, & Purcell, 1984; Carta, Schwartz, Atwater, & McConnell, 1991). Thus, important gains a child has made through an effective early childhood program may be lost in the course of a major transition. A child experiencing such difficulties is at a serious disadvantage for learning more complex skills, for being a full participant in the activities of the new setting, and for forming positive relationships with new teachers and peers. That child also is at increased risk for behavior problems, further delays and disabilities, and future placement in programs that restrict their opportunities to learn and interact with typical peers (Carden-Smith & Fowler, 1983; Fowler, 1982; Hanline, 1993).

Over the past decade, educators and researchers have begun to identify the issues related to transition for children with special needs and to develop comprehensive transition models to address the needs of young children and their families. Systematic transition planning is now a major component of best practice in early childhood special education (ECSE) (Wolery, Strain, & Bailey, 1992) and is, in fact, mandated for early intervention services under P.L. 99-457 (1986). Although more research is needed, investigators are beginning to document specific factors that place children at risk during transition and to demonstrate effective strategies for countering those risks (e.g., Carta, Sainato, & Greenwood, 1988; Noonan et al., 1992; Rule, Fiechtl, & Innocenti, 1990).

The majority of the studies on early childhood transitions relate to the goal of preparing children with special needs to function successfully in new, typically more advanced learning environments. The implications of this research must be considered carefully because they raise questions of developmental appropriateness (Atwater, Carta, Schwartz, & McConnell, in press; Hanline, 1993). Is it appropriate to teach preschool children skills they will need to function in kindergarten? While the response to this question is often based on one's educational philosophy, the research literature can provide some direction in this regard.

Can we identify specific skills that children should be taught to prepare them for transitions into early elementary school environments? Two groups of studies provide assistance in answering that question. First, several researchers have asked experienced teachers in mainstream preschool and kindergarten programs to identify child behaviors that are important for successful functioning in their classrooms. The rationale has been that by identifying skills that are important for a child's future program, once can develop curricula that are most effective in preparing a child with special needs to do well in that program.

Studies employing this approach have obtained remarkably consistent findings. Rather than citing preacademic readiness skills, kindergarten teachers have pointed to children's general skills for independence (e.g., completing a task with minimal teacher supervision), group participation (e.g., attending and following instructions during group activities), and social interaction (e.g., playing cooperatively) as being most essential for successful inclusion in mainstream kindergarten classrooms (Beckoff & Bender, 1989; Hains, Fowler, Schwartz, Kottwitz, & Rosenkoetter, 1989; Sainato & Lyon, 1989; Vincent et al., 1980; Walter & Vincent, 1982). (See Chandler [1992] for a compilation of specific behaviors).

In a second group of studies, researchers have conducted observations of regular kindergarten classrooms and have confirmed that children often take part in activities that require skills for working independently and participating in groups. These studies have reported consistently that children in kindergarten spent most of their time in large instructional groups or in independent tasks with little, if any, individual teacher direction (Carta, Atwater, Schwartz, & Miller, 1990; Hoier, McConnell, & Pallay, 1987; Carta et al., 1988; Rule et al., 1990; Vincent et al., 1980). In contrast, in early childhood special education (ECSE) programs, children spent most of their time in small groups or in one-to-one interactions with the teacher and received much higher rates of teacher prompting and feedback during instructional activities. Thus, although the ECSE programs may have been very effective in promoting many of the children's developmental objectives, they were providing few opportunities for children to learn and to practice skills that would foster independence and group participation in their future classrooms.

It is important to note that despite their general consistent findings, individual observational studies have reported considerable variability across classrooms at both the preschool and kindergarten levels. In fact, even within classrooms, individual children's activities and interaction with their teachers often varied greatly (Carta, Greenwood, & Robinson, 1987; Carta et al., 1988; Hoier et al., 1987; Sainato & Lyon, 1989). Thus, an individual child in transition across early childhood programs may experience environmental changes that differ considerably from those described in the research literature for groups of children.

Taken together, teacher surveys and classroom observations provide consistent evidence that preparing a child with special needs for early childhood transitions does not entail teaching specific preacademic or readiness skills that may not be developmentally or individually appropriate for that child. Rather, it involves teaching generic, functional skills that move a child toward increasing independence and increasingly active, appropriate engagement alongside typical peers in the instructional, play, and social activities of early childhood programs.

The work on this component of KECRI was led by the assumption that assessment of classroom expectations and classroom survival skills are important in predicting and evaluating school success. The empirical literature on early childhood transitions and our work with experienced classroom teachers underscored the need for an assessment instrument that could be used by teachers and program evaluators to assess students' level of competence in identified classroom survival skills and to compare that level to the classroom expectations in the future environment. The discrepancy between students' survival skill competence and kindergarten teachers' expectations could then become a target of classroom survival skills interventions in both preschool and regular kindergarten classrooms.

METHODS

3.1-1 To develop an observation instrument that measures classroom survival skills across preschool and primary level classrooms that will serve young children with disabilities.

We developed a four-part observation instrument to assess classroom survival skills in preschool and early elementary school classrooms. The four components of the ACCESS (Assessment Code/Checklist for Evaluating Survival Skills) system are: a direct observation system, a checklist for evaluating preschool children's independent performance in classroom settings, a checklist for teachers to indicate the level of importance of specific independent skills, and procedural checklists to determining the fidelity of implementation of training in transition, group instruction and independent performance skills. Of the four, the primary instrument developed as part of the KECRI workscope was the direct observation component of ACCESS.

ACCESS is a 10-second momentary and whole interval time sampling system designed specifically to study child-teacher interactions during group instruction, independent worktime, and transition activities. Using this system, specific children in the same classroom are observed for 5 minute blocks of time in a rotating sequence. Observation information includes: (a) activity, (b) engagement in activity, and (c) interactions between teacher and child.

In addition, ecological information such as teaching arrangement, material location, and type of prompt are recorded at the end of each 5-minute interval. The complete set of ACCESS categories appears in Tables 1 and 2.

The ACCESS has been developed to allow for data collection via paper/pencil or computerized data entry. The software operates using DOS-based laptop computers. Software is available to support data entry, interobserver reliability, and data summary functions.

The Student Behavior Scale Rating Scale is a 42-item checklist that allows teachers to rate a child's current level of independent performance using a 5-point scale across eight categories of behaviors. These categories include: instruction following skills, classroom behavior skills, work related skills, large group responding skills, transition skills, independent performance skills, pro-social communication skills, health/self-care behaviors. A parallel Teacher Importance Rating Scale allows teachers to rate the same eight categories of skills on a 5-point scale ranging from "Not important" to "Extremely Important." Both of these instruments were patterned after several classroom survival skills rating scales developed by other authors (e.g., Beckoff & Bender, 1989; Hains, Fowler, Schwartz, Kottwitz, & Rosenkoetter, 1989; Sainato & Lyon, 1983).

Finally, a set of three procedural checklists was developed to determine the fidelity of implementation of interventions for promoting independent functioning in early childhood settings. The three checklists addressed: within-class transition skills, group instruction skills, and independent performance skills. Each checklist was divided into three sections including Classroom Environment, Teacher Procedures, and Student Behaviors. Examples of items for the Procedural Checklist for Transition Skills that are included under Classroom Environment are: "transition paths are cleared of obstacles before the transition begins," and "the endpoint for the transition is clearly marked." Examples of items included under Teacher Procedures are: "Teacher reviews established transition routine as needed", and "Teacher gives cue to begin the transition." Teachers are scored on a 2-point scale that indicates whether they employ each procedure consistently when applicable or that they need some attention to the procedure.

Steps taken to develop these instruments included: literature review, informal observations across a variety of classrooms, pilot test of the preliminary instruments, revision, review of content validity, and final revision.

3.1-2 To establish the reliability of the classroom survival skills observational instrument based upon a sample of preschoolers with and without disabilities in a variety of classroom settings.

In order to assess reliability of the ACCESS system, data were collected on 133 children in selected preschool, kindergarten and first grade classrooms in the Kansas City metropolitan area. Children were observed during two hours of the day designated by the teacher as "prime time" for instruction. Interobserver agreement was determined by simultaneous observations conducted by two observers in the same classroom on 25% of sessions. Interobserver agreement on the observational component of ACCESS teacher and student behavior categories ranged between

74 and 95% with 81% agreement being obtained across categories. Interobserver agreement on ecological variables ranged from 69 to 99% with a mean across categories of 83%.

Interobserver agreement scores were also calculated for the three procedural checklists. The range of agreement of the Transition Procedural Checklist was 69 to 94% with a 85% mean level of agreement. The range of agreement on the Group Instruction *Procedural Checklist was* 77 to 100% with a mean level of 83%. The range of agreement on the Independent Worktime Procedural Checklist was 75% to 97% with a mean level of agreement of 86%. Across all procedural checklists, average interobserver agreement was 84%.

A second means of establishing the reliability of the observation instrument was an analysis to determine the amount of data required to form a representative sample. This analysis has important implications for the cost efficiency of the system. That is, it addresses the issue of the minimum number of sessions required to establish a reliable criterion score. To conduct this analysis we examined the absolute difference between the mean based on the total number of observations, compared to the mean based on a subset of observations for each behavioral variable in the observation code (e.g., engagement, teacher prompts). The total data set included six observations per child. The subsets of observations ranged in size from one to six observations per child. The size of the data set was determined based on our previous experience with establishing the stability of other ecobehavioral observation instruments. Based on these analyses we are satisfied that six observations was the minimum number of observations that should be used to represent a reliable picture of classroom behaviors. Six observations are necessary to account for the day-to-day variability in student and teacher behaviors and to adequately sample the range of possible classroom activities.

3.1-3 To establish the validity of the proposed observation instrument based upon a sample of preschoolers and their performance on this and other measures in preschool, kindergarten, and first grade.

The specific types of validity that were measured were discriminative validity (do different groups of children, as identified by one measure, look different on the measure in question?); concurrent validity (do test scores compare to scores on a similar measure at one point in time? Anastasi, 1988); and predictive validity (do test scores predict later measures?), and treatment validity (are measures sensitive to implementation of treatment)?

Discriminative validity. We examined discriminative validity comparing ACCESS observation scores on various groups of young children. One of the first analyses we conducted was a comparative analysis of ACCESS observation scores of children identified by their teachers as having mild, moderate or severe levels of disabilities. We conducted 10 repeated observation measures on 16 preschool students (5 typically developing, 8 with mild/moderate disabilities, and 3 with severe disabilities and found many distinctive patterns of observational data. One example of the differences found with regard to the rates of teacher prompts to children in the three groups appears in Table 3. The higher levels of individual prompts and smaller numbers of group prompts for children with severe disabilities relative to the other two groups depict the higher levels of independence expected of children with less severe disabilities.

Concurrent validity. In order to examine the concurrent validity of both the ACCESS Observation System and the Survival Skills Rating Form, we have explored the interrelationships between children's scores on structured assessments (i.e., Peabody Picture Vocabulary Test, Brigance First Grade Screen), teachers' ratings of children's social skills (as measured by the Kohn Social Competence Scale) and children's survival skills (as measured by the Survival Skills Rating Forms) and children's mean observation scores on selected variables recorded across repeated sessions during the school year.

Two clusters of variables were selected for those analyses:

1. Pre-Post Assessments

   a. *Structured assessments*

   Peabody Picture Vocabulary Test (standard score)
   Brigance First-Grade Screen

   b. *Teacher ratings*

   Kohn Social Competence Scale - Factor 1 (apathy/withdrawal)
   Kohn Social Competence Scale - Factor 2 (anger/defiance)
   Survival Skills Rating - Group Participation Skills
   Survival Skills Rating - Independent Work Skills
   Survival Skills Rating - Transition Skills

2. ACCESS Behaviors

   a. *During instruction activities*

   Appropriate engagement (attention or active participation)
   Compliance to group prompts

   b. *During independent worktime*

   Active engagement
   Teacher prompts received

   c. *During in-class transitions*

   Active engagement
   Competing (inappropriate) behavior
   Teacher prompts received

Table 4 displays significant pairwise correlations for ACCESS observation scores during worktime, and in-class transitions as measured by ACCESS with scores children received on structured assessments. Scores are presented for children in specialized preschool settings, regular kindergarten classes and regular first grade settings.

In preschool special education classrooms, statistically significant relationships were found for teachers' prompting during independent task periods. Children who had required more teacher prompting throughout the year received lower scores on the Brigance and lower teacher ratings for independent skills. In kindergarten classrooms, children's behaviors during group instruction (appropriate engagement and compliance with prompts) were positively related to all components of the teachers' Survival Skills Ratings. Also, children who had been most actively engaged during independent periods received the highest teacher ratings for independent skills. Similarly, in first grade, those children who exhibited more appropriate classroom behaviors, and who required less teacher prompting, received higher Survival Skills Ratings and lower ratings for behavior problems (Kohn) at the end of the year. Thus, a large number of expected, logically consistent relationships were found, particularly in the primary grades, lending support to the concurrent validity of the ACCESS Observation System.

Predictive validity. We examined predictive validity of the ACCESS system in several ways. In one of the most socially significant ways, we examined the strength of the instrument in predicting kindergarten placement in regular kindergarten classrooms from scores received during preschool. We determined that teachers' ratings of preschoolers on the ACCESS Classroom Survival Skill Rating Forms accurately predicted mainstreamed or kindergarten placement in 65% of cases scored.

Another predictive analysis correlated the ratings children received at the end of preschool and kindergarten to those they received from new teachers at the beginning of the next school year. For each of the skill categories, teachers' ratings were very consistent from one year to the next. From preschool to kindergarten, the following coefficients were obtained (1-tailed test): (a) group participation skills, $r(28) = +.34$, $p<.05$; (b) independent skills, $r(28) = +.48$, $p<.01$; and (c) within-class transition skills, $r(28) = +.68$, $p<.001$. Comparable values from kindergarten to first grade were: (a) group participation skills, $r(66) = +.51$, $p<.001$; (b) independent skills, $r(66) = +.49$, $p<.001$; and (c) within-class transition skills, $r(65) = +.37$, $p<.005$.

In further analyses, we have examined classroom behaviors as predictors of both pre-test assessments and classroom behaviors in subsequent years, yielding only a few significant relationships. For example, children who were more actively engaged during independent worktime in preschool were more actively engaged during within-class transition in kindergarten, $r(8) = +.90$, $p<.005$. Appropriate engagement during group instruction activities in preschool was a positive predictor of Brigance scores in first grade, $r(16) = +.70$, $p<.005$; whereas, inappropriate behavior during within-class transition was a negative predictor of Brigance scores, $r(28) = -.75$, $p<.001$. Finally, those children who were most compliant during group activities in kindergarten, were more likely to be compliant the following year and to receive lower ratings of problem behavior on the Kohn — $r(37) = +.53$, $p<.001$ and $r(44) = -.46$, $p<.005$, respectively.

Treatment validity. One final dimension of the validity of ACCESS was the sensitivity of the instrument to changes in treatment (i.e., treatment validity). Figures 1 and 2 illustrate the sensitivity of the observational component of the ACCESS system in response to a classroom survival skill intervention during Group Instruction (Figure 1) and during Independent Worktime (Figure 2). Figure 1 depicts the increase in the amount of time a preschool child was observed complying to teacher prompts that were directed to the child's instructional group with the implementation of the Group Instruction component of the survival skill intervention. Because the goal of that intervention is to reduce the child's reliance on individual prompts and compliance to group-directed prompts, the data were useful in documenting its efficacy. Figure 2 depicts changes in both the teacher's and the child's behavior with the introduction of the Independent Work component of the survival skill intervention. The goal of this intervention was to increase a child's skill in working independently (with a minimum of teacher direction). The figure shows that after introduction of the intervention, the teacher reduced her level of prompting while the child dramatically improved his engagement during independent activities. These data were important in illustrating the sensitivity of the ACCESS observation instrument to changes brought about in teacher and child behavior through the intervention components.

3.1-4 To conduct discrepancy analyses of target students' level of survival skill functioning in their preschool setting and the level of functioning of students in classrooms where the target students are expected to be placed.

A general method we employed for examining the classroom behavior of any target child using ACCESS has been comparing the classroom behavior of an individual target child to that of classroom peers. Those peers have included: (a) other at-risk children (i.e., children with disabilities, as well as those identified as being at risk for academic problems) and (b) index children (i.e., children who were identified as "B" students by their teachers).

One example of this type of analysis was an examination of grade-level differences for groups of both at-risk and comparison index children (see Table 5). For group instruction activities, children's levels of appropriate engagement were similar across grade levels and child groups; but, compared to their index peers, at-risk children were less compliant to teacher prompts. For both independent worktime and within-class transition activities, at-risk children had a decline in active engagement from preschool to first grade, whereas index children maintained relatively stable levels of engagement. The most striking difference between the preschool special education classroom and regular education classrooms in the primary grades was in the level of teacher prompting during independent activities, emphasizing the importance of preparing children for the dramatic change in classroom ecology.

Another type of discrepancy analysis was an examination of instructional practices across grade levels. The data in Table 6 represent differences across grade levels in instructional practices during group instruction for 8 preschool children, 13 kindergarten children, and 25 first grade children who were identified by their classroom teachers for being at risk for academic learning problems. The table depicts the percent of time that children with developmental delays in preschool, kindergarten, and first grade were exposed to various instructional activities during group instruction. Figure 3 depicts these differences across grades, most of which were expected (e.g., preschoolers were more likely to be instructed in small groups than were kindergarten or first grade children; preschoolers were less likely to be exposed to academic topics). Other differences were counterintuitive (e.g., first graders were less likely to receive group instruction via lecture or drill format and more likely to receive manipulative tasks during this time than were preschoolers or kindergarten children).

Similarly, for the same set of children, we examined differences in instructional practices during independent worktimes in the three grade levels (see Table 7). Here all differences were in the expected direction. As Figure 4 indicates, preschoolers were more likely to receive close teacher supervision and receive prompts directed specifically to them than were kindergartners or first grades. They were less likely to be observed working at individual desks or to be in situation in which the teacher was occupied with other children.

These data reflect a general trend toward less direct prompting to individual children and more frequent opportunities for children to work without supervision as they move from preschool to kindergarten and first grade. A final type of analysis examined the sequential relationship between the type of prompt delivered by the teacher (i.e., target vs. group prompt) and the most likely type of response by children at the three grade levels. Table 8 shows that in group instruction, children were much more likely to respond actively when given a prompts issued directly to them than when they were given group prompts.
The probabilities of children actively responding increased under both conditions across each grade level. These data underscore the need for interventions that teach children how to respond to group prompts if the expectation to respond to such prompts increases at each grade level.

OUTCOMES

The primary goal of this subcomponent of KECRI has been to develop and validate instrumentation that would be useful in planning and monitoring the transition of preschoolers with special needs into kindergarten and first grade environments. A set of 4 instruments described in this report: an instrument for kindergarten teachers to rate the importance of several skills for successful adaptation to their classrooms, an instrument for preschool teachers to rate their children's performance on that same set of skills, an instrument for directly observing key behaviors of children within their classroom environments, and an instrument for rating teacher's quality of implementation of various instructional procedures that facilitate children's independent performance and adaptation. Data collected during the course of this project demonstrated the psychometric properties of those instruments and their usefulness in facilitating the successful transition of young children into general early educational environments.

IMPACT

This project has had local, regional and national impact through its products, knowledge production, and training. The products generated by this project in the form of its instruments have proven useful not only in assessing and planning for individual children's transition, but they have also been useful for districts to employ in order to obtain a general district-wide picture of the level of preparedness of their preschool children for kindergarten. This has guided many districts in developing and implementing preschool-based interventions to prepare children for kindergarten as well as interventions to adapt the instruction and environments of kindergarten environments to make them more suitable for all children's needs.

This project has also had an impact in extending in knowledge production in extending the conceptual understanding of the compatibility of transition planning for preschoolers with developmentally appropriate practice. In addition, the project has generated a methodological template that has proven useful for planning and evaluating transitions not only for preschool children but for all diverse populations for whom major shifts in settings are anticipated. The steps in the model appear in Table 9.

This project, with the assistance of two other OSERS projects, has been successful in disseminating this set of assessments and training teachers in their implementation in numerous school districts across several states. In the Kansas City metropolitan area, 5 districts have used the model. Locally more than 100 teachers and 50 paraprofessional have been trained to use the assessments. Nationally, with the assistance of an EEPCD outreach project, the assessments have been used in more than 15 districts and agencies.

The most important impact of the project, however, has been on children's outcomes. The assessment instruments developed as part of this project played a critical role in an experimental validation of a classroom survival skills intervention. As part of that project, children with disabilities who received that intervention as well as a comparison group of children were followed longitudinally into kindergarten and first grade. Children who received the assessments and the intervention were significantly less likely to require special services in kindergarten and first grade.

RECOMMENDATIONS

This project has demonstrated procedures that are valid and useful for assisting in children's successful transition to regular kindergarten and first grade classrooms. Researchers need more opportunities to mount the type of programmatic research that allowed us to develop the instrumentation, the interventions, and to show the long-term effects. Practitioners need more of this type of information that not only is useful but has been demonstrated as valid. Being able to disseminate the information and products generated through this project through our EEPCD Outreach project has been invaluable. We recommend that more Institutes take advantage of the Outreach project funding mechanism so that more validated products that influence children's development can reach practitioners.

REFERENCES

Anastasi, A. (1988). Psychological Testing. New York: Macmillan.

Anderson-Inman, L., Walker, H.W., & Purcell, J. (1984). Promoting the transfer of skills across settings: Transenvironmental programming for handicapped students in the mainstream. In W.L. Heward, T.E. Heron, D.S. Hill, & J. Trap-Porter (Eds.), Focus on behavior analysis in education (pp. 17-37). Columbus, OH: Charles Merrill.

Atwater, J.B., Carta, J.J., Schwartz, I.S., & McConnell, S.R. (in press). Blending developmentally appropriate practice and early childhood special education: Redefining best practice to meet the needs of all children. In B.L. Mallory & R.S. New (Eds.), Diversity and developmentally appropriate practice. New York: Teachers College Press.

Beckoff, A.G., & Bender, W.N. (1989). Programming for mainstream kindergarten success in preschool: Teachers' perceptions of necessary prerequisite skills. Journal of Early Intervention, 13, 269-280.

Carden-Smith, L.K., & Fowler, S.A. (1983). As assessment of student and teacher behavior in treatment and mainstreamed classes for preschool and kindergarten. Analysis and Intervention in Developmental Disabilities, 3, 35-37.

Carta, J.J., Atwater, J.B., Schwartz, I.S., & Miller, P. (1990). Applications of ecobehavioral analysis to the study of transitions across early education settings. Education and Treatment of Children, 13, 298-315.

Carta, J.J., Greenwood, C.R., & Robinson, S.L. (1987). Application of an ecobehavioral approach to the evaluation of early intervention programs. In R.J. Prinz (Ed.), Advances in behavioral assessment of children and families (Vol. 3, pp. 123-155). Greenwich, CT: JAI Press.

Carta, J.J., Sainato, D.M., & Greenwood, C.R. (1988). Advances in the ecological assessment of classroom instruction of young children with handicaps. In S.L. Odom & M.B. Karnes (Eds.), Early intervention for infants and children with handicaps (pp. 217-239). Baltimore: Brookes.

Carta, J.J., Schwartz, I.S., Atwater, J.B., & McConnell, S.R. (1991). Developmentally appropriate practice: Appraising its usefulness for young children with disabilities. Topics in Early Childhood Special Education, 11(1), 1-20.

Chandler, L.K. (1992). Promoting children's social/survival skills as a strategy for transition to mainstreamed kindergarten programs. In S.L. Odom, S.R. McConnell, & M.A. McEvoy (Eds.), Social competence of young children with disabilities: Issues and strategies for intervention (pp. 245-276). Baltimore: Brookes.

Education of the Handicapped Act Amendments of 1986, PL 99-457. (October 8, 1986). Title 20, U. S. C. 1400 et seq; U. S. Statutes at Large, 100, 1145-1177.

Fowler, S.A. (1982). Transition from preschool to kindergarten for children with special needs. In K.E. Allen & E.M. Goetz (Eds.), Early childhood education: Special problems, special solutions (pp. 309-335). Rockville, MD: Aspen.

Fowler, S.A., Schwartz, I., & Atwater, J. (1991). Perspectives on the transition from preschool to kindergarten for children with disabilities and their families. Exceptional Children, 58, 136-145.

Hains, A.H., Fowler, S.A., & Chandler, L.K. (1988). Planning school transitions: Family and professional collaboration. Journal of the Division of Early Childhood, 12, 108-115.

Hains, A.H., Fowler, S.A., Schwartz, I.S., Kottwitz, E., & Rosenkoetter, S. (1989). A comparison of preschool and Kindergarten teacher expectations for school readiness. Early Childhood Research Quarterly, 4, 75-88.

Hanline, M.F. (1993). Facilitating integrated preschool service delivery transitions for children, families, and professionals. In C.A. Peck, S.L. Odom, & D.D. Bricker (Eds.), Integrating young children with disabilities into community programs: Ecological perspectives on research and implementation (pp. 133-146). Baltimore: Brookes.

Hoier, T.S., McConnell, S.R., & Pallay, A.G. (1987). Observational assessment for planning and evaluating educational transitions: An initial analysis of template matching. Behavioral Assessment, 9, 9-18.

Noonan, M.J., Tatokalau, N.B., Lauth-Torres, L., McCormick, L., Esaki, C.A., & Claybaugh, K.W. (1992). Validating critical skills for preschool success. Infant-Toddler Intervention: The Transdisciplinary Journal, 2, 187-203.

Rule, S., Fiechtl, B.J., & Innocenti, M. (1990). Preparation for transition to mainstreamed post-preschool environments: Development of a survival skills curriculum. Topics in Early Childhood Special Education, 9(4), 78-90.

Sainato, D., & Lyon, S.R. (1983, December). A descriptive analysis of the requirements for independent performance in handicapped and nonhandicapped preschool classrooms. In P.S. Strain (Chair), Assisting behaviorally handicapped in mainstream settings: A report of the research from the Early Childhood Research Institute at the University of Pittsburgh. Presentation at the HCEEP/DEC Conference, Washington, DC.

Sainato, D.M., & Lyon, S.R. (1989). Promoting successful mainstreaming transitions for handicapped preschool children. Journal of Early Intervention, 13, 305-314.

Vincent, L., Salisbury, C., Walter, G., Brown, P., Gruenwald, L.J., & Powers, M. (1980). Program evaluation and curriculum development in early childhood special education. In W. Sailor, B. Wilcox, & L. Brown (Eds.), Methods of instruction for severely handicapped students (pp. 303-328). Baltimore: Brookes.

Walter, G., & Vincent, L. (1982). The handicapped child in the regular classroom. Journal of the Division for Early Childhood, 6, 84-95.

Wolery, M., Strain, P.S., & Bailey, D.B. (1992). Reaching potentials of children with special needs. In S. Bredekamp & T. Rosegrant (Eds.), Reaching potentials: Appropriate curriculum and assessment for young children (Vol. 1, pp. 92-111). Washington, DC: National Association for the Education of Young Children.

Table 1

ACCESS Observation System Behavioral Variables

TEACHER	CHILD ENGAGEMENT	CHILD RESPONSES
Focus	Active Engagement	Compliance
Physical Prompt	Task Management	Noncompliance
Verbal Directive	Attention	Asking for Help
Question	Competing Behavior	
Gestural Cue	Waiting	
Approval		
Disapproval		
Corrective Feedback		

Table 2

ACCESS Observation System Ecological Variables

GROUP INSTRUCTION	INDEPENDENT ACTIVITIES	TRANSITION
Location	Seating	Type of Cue
Group Size	Task	Participants
Content	Materials	Clean-up Duties
Materials	Location	
Teaching Format	Teaching Format	

Table 3

Teacher Prompts to Individual Target Child and Target Child's Group

	Prompts to Individid. Target			Prompts to Target Child's Group		
	GROUP	INDEPENDENT WORK	TRANSITION	GROUP	INDEPENDENT WORK	TRANSITION
Typical	4	10	4	17	1	12
Mild/Mod.	5	15	4	15	4	4
Severe	40	45	62	3	0	0

Note. Figures depict the percentage of 10 second intervals within Group Instruction, Independent Worktime, and Transition Activities.

Table 4

Correlations between classroom behaviors and year-end assessments

Activity/Behavior	PPVT	Brigance	Kohn 1	SURVIVAL SKILLS RATINGS Group Kohn 2	 Independent Activities	 Within-class Worktime Transition
PRESCHOOL						
GROUP INSTRUCTION						
Engagement						
Compliance						
INDEPENDENT WORKTIME						
Active						
T Prompts	-.65				-.65	
WITHIN-CLASS TRANSITION						
Active						
Competing						
T Prompts						
KINDERGARTEN						
GROUP INSTRUCTION						
Engagement		-.44		+.44	+.46	+.47
Compliance				+.52	+.55	+.38
INDEPENDENT WORKTIME						
Active					+.40	
T Prompts						
WITHIN-CLASS TRANSITION						
Active						
Competing						
T Prompts						
FIRST GRADE						
GROUP INSTRUCTION						
Engagement				+.35		
Compliance		-.45		+.40	+.43	+.40
INDEPENDENT WORKTIME						
Active		-.47	-.38	+.32	+.39	+.31
T Prompts	-.46		+.32	-.35	-.40	-.38
WITHIN-CLASS TRANSITION						
Active						
Competing						
T Prompts						

Note: Numbers displayed are coefficients that were significant at $p<.001$ (1-tailed test) for a table-wise alpha of $p<1.05$.

Table 5

Behavioral differences across grades and child groups

Activity/Behavior		Special Education Preschool	Regular Education Kindergarten	Regular Education First Grade
GROUP INSTRUCTION				
Engagement	Risk	87	81	84
	Index		80	87
Compliance	Risk	64	62	69
	Index		74	81
INDEPENDENT WORKTIME				
Active	Risk	53	51	40
	Index		49	48
Teacher Prompts	Risk	14	2	2
	Index		2	1
WITHIN-CLASS TRANSITION				
Active	Risk	69	60	45
	Index		61	60
Competing	Risk	2	1	4
	Index		4	3
Teacher Prompts	Risk	4	2	5
	Index		1	3

Note: Numbers represent percentage of intervals in which the behavior occurred with the exception of compliance, which is the percentage of group-directed prompts to which the child complied.

Table 6

Differences in instructional practices across grades during group instruction

Instructional Practice	Special Education Preschool	Regular Education Kindergarten	Regular Education First Grade
Small Groups	24.38	7.08	9.48
Academic topic	49.00	66.46	83.12
Manipulative task	12.50	20.77	49.68
Lecture format	56.00	58.54	21.00
Drill format	31.25	21.77	20.60
Group-directed instruction	21.50	25.38	25.12

Note. Numbers represent percentage of intervals in which the instruction practice occurred.

Table 7

Differences in instructional practices across grades during independent worktime

Instructional Practice	Special Education Preschool	Regular Education Kindergarten	Regular Education First Grade
Work at individual desk	4.75	18.62	34.60
Close teacher supervision	50.38	11.08	2.44
General teacher supervision	44.50	68.92	28.56
Teacher occupied with other children	5.25	20.00	69.12
Teacher prompts to target	14.25	2.15	2.00

Note. Numbers represent percent intervals in which the instructional practice occurred.

Table 8

Conditional probabilities of children's responses dependent on preceding prompt condition

Group Instruction	Base Rate	Target Prompt	Group Prompt	No Prompt
GROUP INSTRUCTION				
ACTIVE RESPONDING				
Preschool	11.76	16.22	8.76	11.56
Kindergarten	13.16	21.65	12.85	12.98
First Grade	21.64	37.69	21.96	20.43
ATTENDING				
Preschool	74.32	74.91	80.96	72.00
Kindergarten	64.64	70.09	71.73	61.36
First Grade	61.65	57.40	66.58	59.74
INDEPENDENT WORKTIME				
ACTIVE RESPONDING				
Preschool	58.00	41.13	17.92	60.32
Kindergarten	60.00	36.75	42.17	60.81
First Grade	55.93	38.30	53.18	56.42
ATTENDING				
Preschool	23.88	50.54	36.31	18.96
Kindergarten	14.98	57.33	16.83	13.89
First Grade	18.12	51.90	12.91	17.23

Table 9

Methodological approach for planning and evaluating transitions

1. Determine expectations of next environment
2. Determine individual's level of preparedness for next environment.
3. Implement interventions to help "bridge the gap" between environments.
    - -within present environment
    - -within future environment
4. Measure quality of intervention implementation.
5. Determine changes in child and environment during intervention.
6. Evaluate outcomes of transition.
7. Evaluate consumer satisfaction with transition.

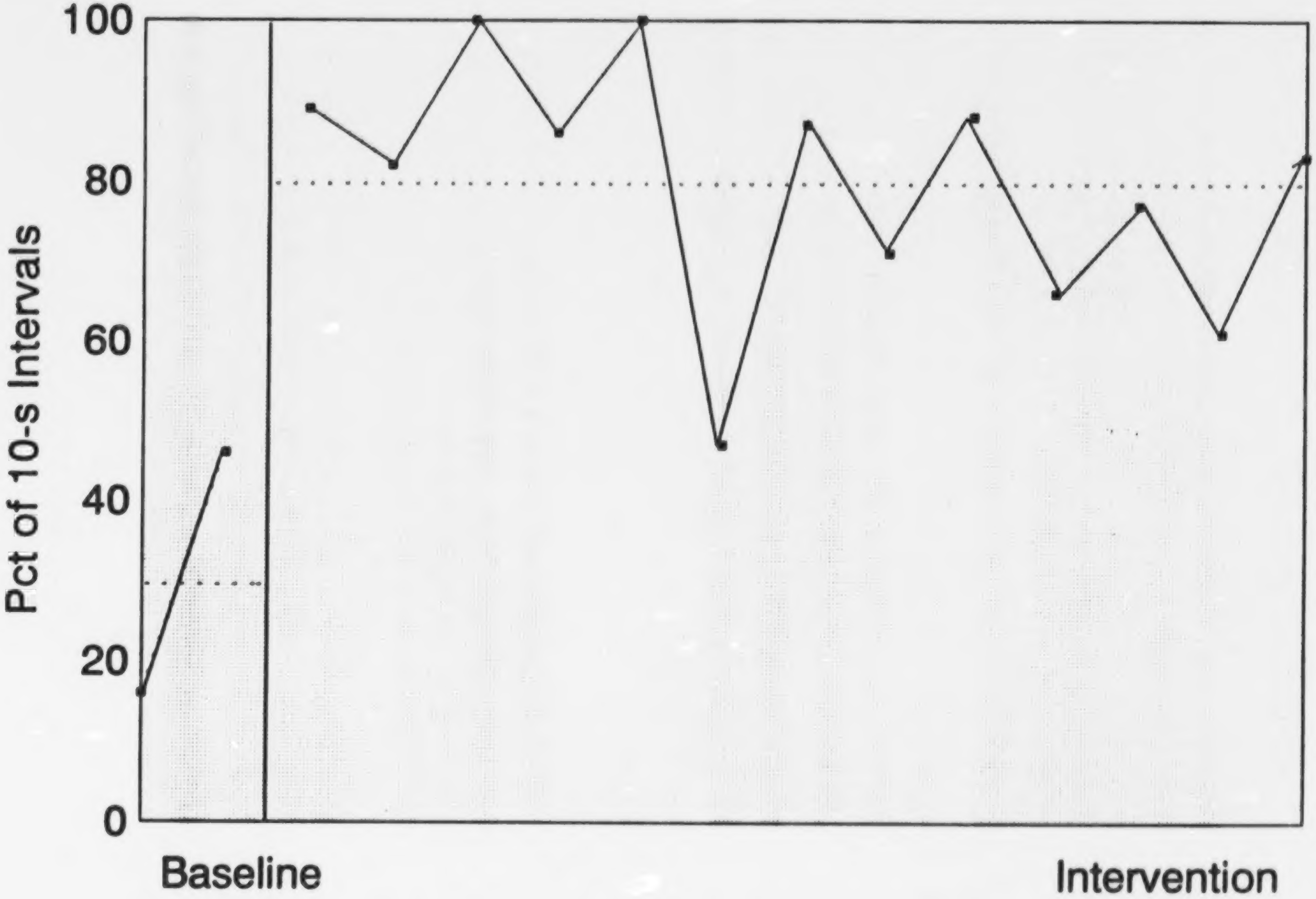


Figure 1. Child's Compliance with Group-Directed Prompts (Group Instruction Activities)

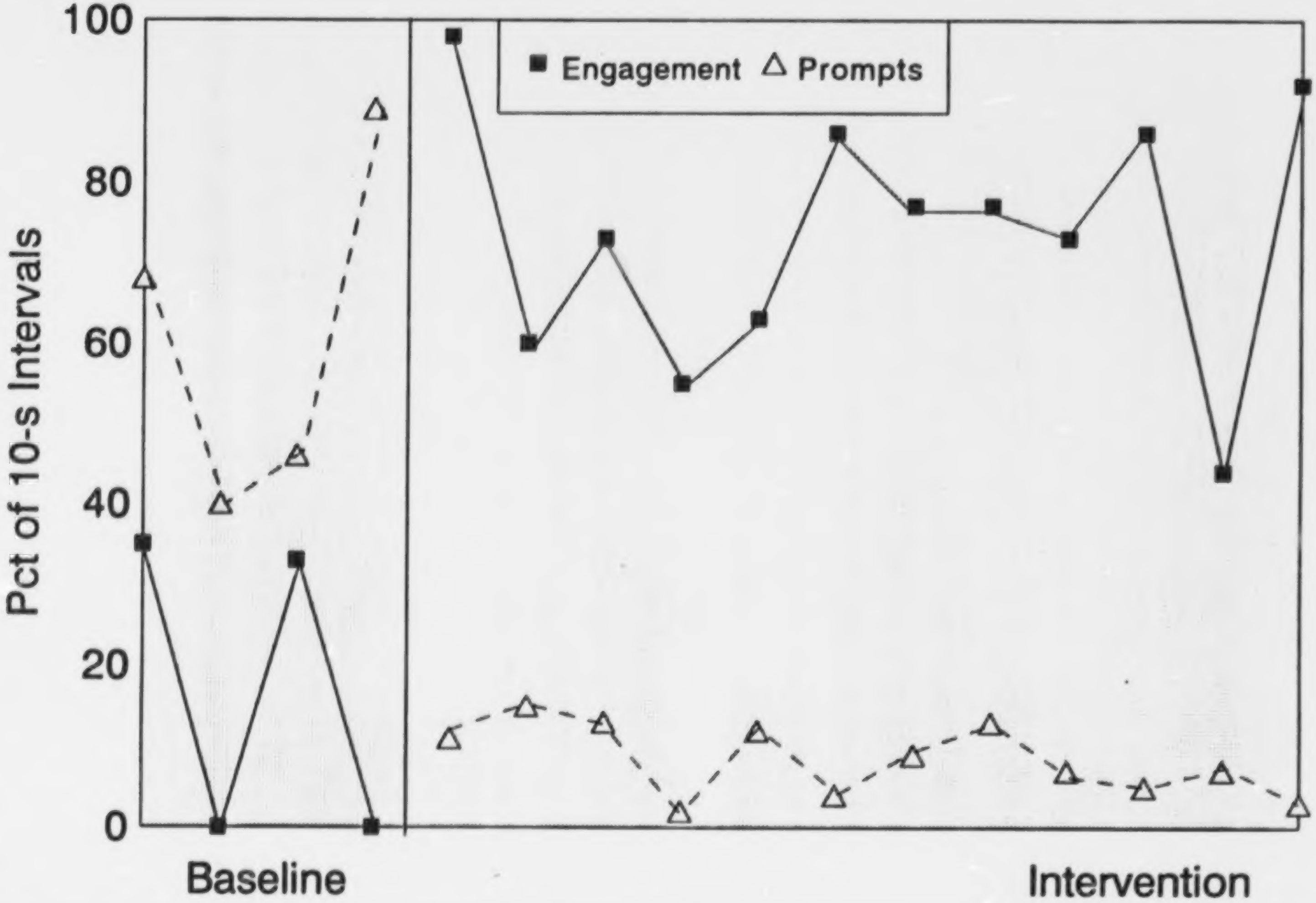


Figure 2. Child's Active Engagement and Prompts Received (Independent Activities)

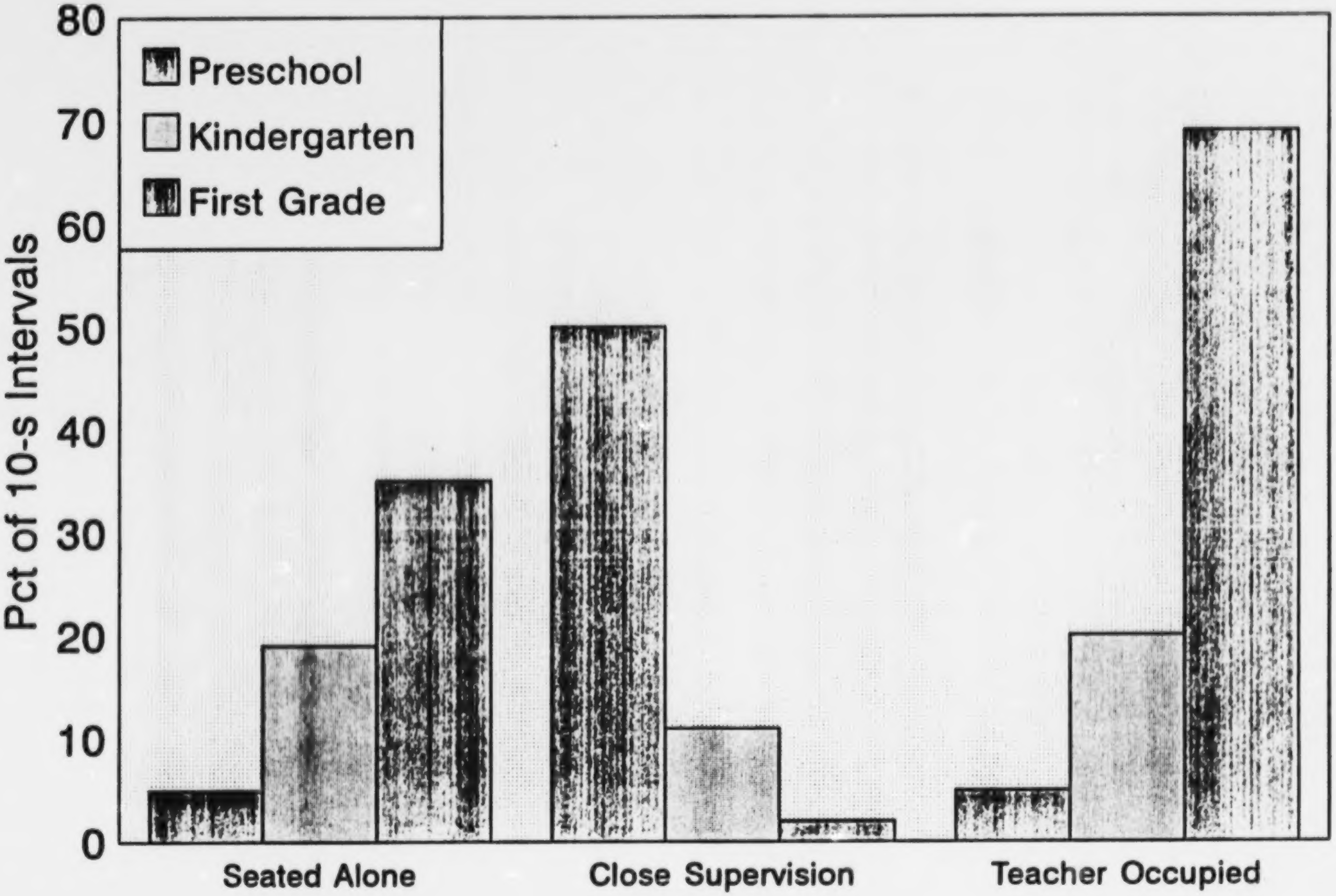


Figure 3. Classroom Ecology from Preschool to First Grade (Independent Activities)

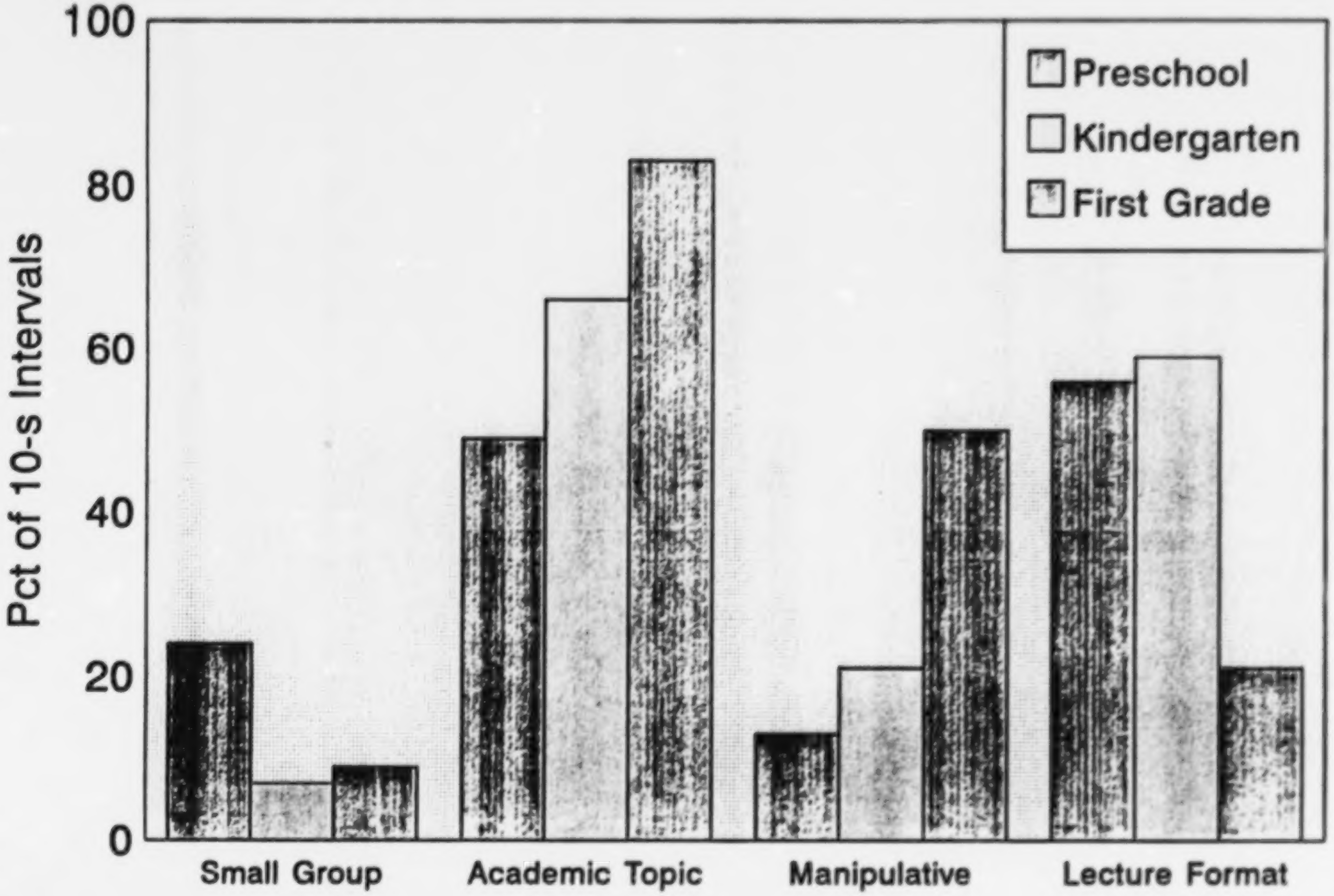


Figure 4. Classroom Ecology from Preschool to First Grade (Group Instruction Activities)

PROJECT 3.2

PROMOTING SUCCESSFUL TRANSITION TO THE PRIMARY GRADES: PREDICTION OF READING PROBLEMS IN CHILDREN WITH SPEECH AND LANGUAGE IMPAIRMENTS

Hugh W. Catts, Ph.D., Department of Speech-Language-Hearing

TARGETED TRANSITION PROBLEM

The overall goals of this project are: (1) to delineate individual differences among children with speech and language impairments that are predictive of reading problems during the transition into the primary grades, and (2) to utilize information about these individual differences to develop and test an intervention strategy for the early identification of reading problems. These goals are reflected in the following objectives.

OBJECTIVES

3.2-1. To examine the relationship between specific aspects of oral language development in preschool children (e.g., rapid naming, phonological awareness) and reading performance in the primary grades.

3.2-2. To develop and evaluate a screening instrument for the identification of preschool children with speech and language impairments who are at risk for reading disabilities.

BACKGROUND

The transition from preschool into the primary grades is a particularly important one for young children. With this move come new challenges, perhaps the most significant of which is the acquisition of literacy. It is during the primary grades that most children acquire the basic skills of reading and writing. Because written language skills play such an integral role in education, success in acquiring these skills can have a significant impact on children's future academic performance.

For most young children, the transition into the primary grades and literacy is fairly smooth and is met with success. However, for 10 to 15% of young children this transition is much more difficult (Thomson, 1984). These children, often unexpectedly, experience significant problems in acquiring reading and writing skills. Research demonstrates that this failure can have further escalating negative side effects on the acquisition of literacy (Stanovich, 1986). Because of their lack of success, poor readers are given fewer opportunities to read and are less motivated to read than are their normally achieving peers. Research indicates that these differences are apparent as early as first grade (Allington, 1983; Biemiller, 1977-1978). As a result of their lack of opportunity and motivation, poor readers gain less experience and practice with written language and fall further behind. Thus, while other children experience success in the primary grades and build on this success in their later education, poor readers are often caught in a perpetual cycle of failure.

One group of children who are particularly at risk for reading disabilities are those with speech and language impairments. Numerous investigations have shown that these children often demonstrate written language difficulties in school (Aram & Nation, 1980; Bishop & Adams, 1990; Hall & Tomblin, 1978; King, Jones, & Lasky, 1982; Menyuk et al., 1991; Tallal, Curtiss, & Kaplan, 1989).

Because the negative side effects of difficulties in the acquisition of literacy may begin so early in children's education, timely intervention programs must be developed. An important component of this intervention is early identification. Children at risk for reading failure need to be identified prior to entering the primary grades. Once identified, these children can receive appropriate intervention. Children with speech and language impairments are an excellent target population. In most cases, these children are identified before or during preschool and are enrolled in speech-language therapy. Because of their early identification, these children could be targeted for literacy intervention programs during the transition into the primary grades. However, it may not be necessary (or feasible) to provide all preschool children who have speech and language impairments with this intervention. As noted above, research indicated that whereas many of these children will go on to experience difficulties in the acquisition of literacy, others will not. Measures and procedures need to be developed that will help identify those children with speech and language impairments that are most susceptible to early reading failure.

The present project represents an attempt to delineate those individual differences among preschool children with speech and language impairments that are predictive of reading disabilities during the transition into the primary grades. Recent research involving large cross-sections of children indicates that individual differences in specific cognitive-linguistic abilities are strongly related to reading development (Stanovich, 1985; Wagner & Torgesen, 1987). This work has shown that the ability to rapidly retrieve verbal labels from memory is related to success in the acquisition of early reading skills (Blachman, 1984; Denckla & Rudel, 1976; Wolf, 1982). In order to decode and read words, young children must learn to automatically identify and retrieve the verbal labels associated with printed words. Research also has shown that explicit awareness of the phonological (speech sound) structure of the language is an important prerequisite to learning to decode printed words (Bradley & Bryant, 1983; Cunningham, & Cramer, 1984; Stanovich, Treiman & Baron, 1983). In order for children to grasp the relationship between letters and sounds, they must be aware of the sounds in words. Several investigators have demonstrated that measures of phonological awareness and rapid naming are predictive of reading achievement (Blachman, 1984; Wagner & Torgesen, 1987; Wolf, 1984). For example, Blachman (1984) found that kindergarten measures of phonological awareness and rapid naming accounted for a significant proportion of the variance (65%) in the first grade reading achievement of a large cross-section of children. Finally, researchers have also reported a relationship between verbal short-term memory and reading achievement (Mann & Liberman, 1984; Torgesen, 1991).

Although phonological awareness, rapid naming, and verbal short-term memory have been examined in various groups of children, these variables have received only limited attention in children with oral language impairments (Kail & Leonard, 1986; Kamhi & Catts, 1986; Kamhi, Catts, Mauer, Apel, & Gentry, 1988). It is unclear whether these variables might be useful predictors of reading problems in children with speech and language impairments. In the first phase of this project, an investigation was conducted to examine the relationships between phonological awareness/rapid naming/verbal short-term memory abilities and the development of reading in children with speech and language impairments (referred to as Study 1). The results of this study were used to develop and evaluate a screening instrument for the identification of preschool children with speech and language impairments (referred to as Study 2).

STUDY 1:

METHODS

In this project, two groups of children were selected from the Topeka and Lawrence Public School Districts. One group included 79 children who had been referred to school speech-language pathologists for an evaluation of possible speech and language impairments (subsequently called the referred group). The second group of children included 32 age-matched control subjects with no history of speech and language problems. These subjects were included in order to determine age-appropriate performance on the test battery. All subjects demonstrated normal nonverbal intellectual abilities. School records also indicated that children had hearing and corrected vision within normal limits and no history of emotional disorders.

At the beginning of the study, all subjects were tested in kindergarten. Subjects were subsequently seen in first and second grades. All control subjects and the majority of the referred subjects ($\underline{N}$ = 52) matriculated directly from first to second grade. Twenty-three referred subjects, however, were retained in kindergarten for an additional year or received a placement in developmental first grade (D-1) for one year. The latter placement represents a transition between kindergarten and first grade. Children in a D-1 placement spent time daily in both kindergarten and first grade classes (or curriculum). In these classes, no formal reading instruction was typically provided. Prereading and language stimulation activities continued to dominate the curriculum. The high percentage of referred subjects that was retained in kindergarten or placed in D-1 classes indicates that speech-language development is an important factor in decisions concerning the transition into first grade.

In the second half of the kindergarten, all subjects in the study were administered a battery of standardized speech and language tests. These included measures of receptive and expressive language abilities and articulation performance (see Table 1). The standardized speech and language tests were used for classification and analysis purposes as reported in Catts (1991; 1993). In addition to the standardized speech and language tests, a series of experimental language measures was administered to all the subjects. These tasks were selected or developed on the basis of previous research which suggested that they might be predictive of reading achievement in the transition into the primary grades (Catts, 1989; Wagner & Torgesen, 1987). These included measures of phonological awareness, verbal short-term memory, and rapid naming abilities.

Phonological awareness

The measures of phonological awareness included the deletion, blending, and phonological oddity tasks. Two other tasks were initially employed but proved to be either too difficult (segmentation) or unreliable (rhyme production). In the deletion task, which was adapted from Rosner (1971), subjects were required to delete the initial syllable or phoneme from a word and say the remaining sound sequence. For example, the child was asked to say "baseball" without "base" or "cat" without /k/. The blending task required the subject to blend together and pronounce a series of syllables or phonemes ("birth day" or "s oa p". The phonological oddity task, modeled after Bradley and Bryant's (1985) work, required children to choose which of three orally presented words did not begin with the same syllable or phoneme as the other two words.

Verbal short-term memory

Three measures of verbal short-term memory were employed. These involved memory for word lists of 4 items in length, digit lists of 3 to 6 items and sentences increasing in length from 3 to 13 words.

Rapid naming

Three rapid naming tasks were also administered. In these tasks, subjects were required to rapidly name a small set of pictured objects, colors, or colored animals which were repeatedly and randomly displayed in rows on stimulus cards. The time it took for the subject to name all the items on each stimulus card served as the index of performance. Two of the rapid naming tasks had been used previously in research (e.g., Denckla & Rudel, 1976; Wolf, 1986) and one was developed for this investigation (rapid naming of colored animals). The rapid naming of letters and rapid naming of numbers tasks (Wolf, 1986) were also initially employed but were dropped because many of the referred subjects were unable to name the letters or numbers.

In first and second grades, the subjects were administered measures of reading achievement. At each grade a measure of word reading (Word Identification) and pseudoword reading (Word Attack) from the Woodcock Reading Mastery Tests were obtained. The latter measure provided an index of subjects knowledge and use of sound-spelling rules. In second grade, the Gray Oral Reading Test was administered. This test provided a measure of oral reading comprehension.

OUTCOMES

Data analyses examined the relationships between the language measures administered in kindergarten and the reading achievement tests given in first and second grades. In order to assess these relationships, correlational and multiple regression analyses were undertaken. Table 2 displays the correlational coefficients between reading achievement measures in first grade and the experimental language measures in kindergarten. Partial correlations are presented in order to control for possible variability introduced by subjects showing different rates of matriculation to first grade. Recall, most of the referred subjects went directly to first grade. Others, however, repeated kindergarten or were placed in D-1 classrooms prior to going to first grade.

Table 2 indicates that in general the experimental language measures were moderately correlated with reading achievement in first grade. The Deletion task, a measure of phonological awareness, was found to be most closely related to reading achievement. Multiple regression analyses indicated that the Rapid Naming of Animals task also contributed significantly to accounting for variance in reading achievement after the Deletion test was entered. Together the Deletion and Rapid Naming of Animals tasks accounted for 42% of the variance in Word Identification and 38% of the variance in Word Attack. Catts (1993), in a further analysis of some of these data, found that once combined measures of phonological awareness and rapid naming were entered into the regression analysis, standardized measures of receptive and expressive language and articulation accounted for no additional variance in first grade reading achievement.

To further examine the effectiveness of the kindergarten experimental language measures in predicting reading achievement in first grade, discriminant analyses were performed. For these analyses, the referred subjects were divided into good and poor readers on the basis of their combined performances on the Word Identification and Word Attack tests. Poor readers were defined as those subjects whose combined reading scores fell at least 1 SD below the mean combined reading score of the normal control group. Subjects not meeting this criterion were considered good readers. These procedures led to the identification of 36 poor readers among the 72 referred subjects. These results support previous findings that children with speech and language impairments are at a high risk for subsequent reading disabilities.

Table 3 presents the $\underline{F}$-values, levels of significance, and the percentages of correct classification of the reading group membership for each of the variables that reached significance. These results indicated that good and poor readers were found to be significantly different on 6 of the 10 experimental language tasks. Groups were best differentiated on the basis of their performance on the Deletion task. Percentages of correct classification were somewhat lower for the rapid naming tasks. However, the rapid naming tasks were better at discriminating reading levels for some subjects than others. For example, if only the children who showed normal matriculation are considered, the Rapid Naming of Animals and the Rapid Naming of Colors tasks were good predictors of reading group membership (79% and 76% correct classification respectively).

Table 4 displays the correlation coefficients between kindergarten experimental language measures and measures of reading achievement in the second grade. Again, partial correlations are presented to control for differences between regularly matriculating subjects and those subjects showing delayed matriculation. These data show that the experimental language measures administered in kindergarten generally had a moderate to low-moderate correlation with reading measures two years later. Again, correlations were strongest for the Deletion task. Multiple regression analyses indicated that the Deletion task combined with the Rapid Naming of Colors or Rapid Naming of Animals to explain approximately 50% of the variance in second grade reading measures.

Discriminant analyses were again performed. For these analyses, the children were divided into good and poor readers using a similar criterion as used for the first grade analyses. These procedures led to the identification of 32 poor readers among the 65 subjects who were available for testing in second grade. These results again show the high incidence of reading problems in children with speech and language impairments. Table 5 presents the F-values, levels of significance, and the percentages of correct classification of reading group membership for each of the variables that reached significance. Each of the phonological awareness and rapid naming tasks significantly differentiated good and poor reading groups. The Deletion task had the highest percentage of correct classification. Again, if only the subjects with regular matriculation are considered, the rapid naming tasks were better predictors of group membership (66 to 71% correct classification) than if all subjects were considered. Furthermore, it was found that for these subjects that the Deletion task combined with the Rapid Naming of Animals to predict group membership correctly 78% of the time. This result is in keeping with that necessary for an effective screening instrument. Additional analyses and discussion of these data are presented in Catts (1991; 1993).

STUDY 2

The second objective of this project was to develop and evaluate a screening instrument for the identification of preschool children with speech-language impairments who are at risk for reading disabilities. The results of Study 1 were used to meet this objective. On the basis of those results, 4 of the experimental language measures were selected for further testing and evaluation with a new cohort of subjects.

METHODS

The subjects for Study 2 were 53 children from the Lawrence and Topeka Public School Districts. Each of these children meet state guidelines for speech-language impairments and were enrolled in speech-language therapy. These children had hearing and corrected vision within normal limits and no history of emotional disorders. At the beginning of the study, all subjects were in kindergarten. Subjects were subsequently followed through the first grade. Twelve of the subjects were unavailable for testing in the first grade. Some of these children had been retained in kindergarten (N = 4) or were placed in a D-1 classes (N = 5). The others (N = 3) moved out of the school district.

In kindergarten, the subjects were administered a battery of standardized speech and language tests similar to that employed in Study 1. This testing was used to confirm that subjects exhibited a speech and/or language impairment. Results indicated that of the 41 subjects who completed the study, 13 subjects had primarily articulation problems and 28 subjects had language impairments (many with articulation impairments as well).

In addition to the standardized tests, subjects were administered a screening battery consisting of 4 of the experimental measures employed in Study 1. These were the Deletion task, Blending task, Rapid Naming of Animals, and Rapid Naming of Objects (see Figures 1-4). The Deletion and the Blending tasks proved to be the best predictors among the phonological awareness tasks in Study 1. These tasks were revised on the basis of previous results to reduce basal and ceiling effects. The Rapid Naming of Animals and Rapid Naming of Objects tasks were also included because of their relationship to reading achievement. The Rapid Naming of Animals task was the best predictor of reading achievement among the rapid naming tasks. The Rapid Naming of Objects task and Rapid Naming of Colors task showed an approximately equal relationship to reading achievement. The Rapid Naming of Objects task was chosen for Study 2 over the Rapid Naming of Colors task because of the similarity of the latter with the Rapid Naming of Animals task. Both the Rapid Naming of Colors and the Rapid Naming of Animals tasks required the rapid retrieval of color names. Tests of verbal short-term memory were not included because these measures were not found to be closely related to reading achievement in Study 1.

In the second half of the first grade year, subjects were administered a battery of reading tests. These included the Word Identification and Word Attack subtests of the Woodcock Reading Mastery Tests and the Gray Oral Reading Test. The results of this testing indicated that as a group, subjects were reading at a level 1 to 1 1/2 standard deviations below that expected for their grade level.

Of particular interest for this investigation was the relationship between subjects' performance on the screening battery administered in kindergarten and their reading performance in first grade. Table 6 displays the correlations between the measures on the screening battery and the tests of reading achievement. These data again reveal a moderate correlation between the measures of phonological awareness (e.g., Deletion and Blending tasks) and first grade reading achievement. The Rapid Naming of Animals task showed a moderate to low moderate correlation with reading achievement, whereas the Rapid Naming of Object tasks was not significantly related to Word Identification or Word Attack scores and showed a low correlation with the Gray Oral Reading Test. Multiple regression analyses indicated that the screening battery as a whole accounted for a large percentage of variance in reading achievement. The combined measure accounted for 55% of the variance in the Word Identification subtest, 45% of the variance in both the Word Attack subtest and the Gray Oral Reading Test.

To further examine the effectiveness of the kindergarten experimental language measures in predicting reading achievement in first grade, discriminant analyses were performed. As in Study 1, the subjects were divided into good and poor readers on the basis of their combined performances on the Word Identification and Word Attack tests. Poor readers were defined as those subjects whose combined reading scores fell at least 1 SD below the mean combined reading score of the normal control group. Subjects not meeting this criterion were considered good readers. These procedures led to the identification of 30 poor readers among the 41 subjects tested in first grade. The percentage of poor readers in this study (75%) is higher than that found in Study 1 (50%). This may be explained in part by differences in the subjects in Study 1 and Study 2. All the subjects in Study 2 had confirmed speech and/or language impairments, while subjects in Study 1 had only been referred for an evaluation of speech and language impairments. Only approximately 75% of the subjects had confirmed speech-language impairments and thus as a group might be expected to show higher reading scores than subjects in Study 2.

Table 7 displays the F-values, levels of significance, and the percentages of correct classification of the reading group membership for each of the measures in the testing battery. These results indicated that good and poor readers were found to be significantly different on three of the four measures in the screening battery. The Deletion and Blending tasks were the best tasks at differentiating good and poor readers. If these measures were combined, they predicted group membership with 83% accuracy. This value was increased to 85% with the addition of the rapid naming tasks. These values of correct classification are in keeping with that necessary for an effective screening instrument.

Taken together, the results of this project demonstrate that kindergarten measures of specific language abilities are good predictors of reading achievement in the primary grades. Measures of phonological awareness and rapid naming predicted reading outcome of children with speech-language impairments with a high degree of accuracy. These results have important implications for educational and clinical practice. Our results suggest that tasks similar to our measures of phonological awareness and rapid naming should be included in kindergarten screening for the purpose of early identification. The use of such measures in combination with other measures/information (e.g., family history of reading/language problems, literacy experience) should allow for the early identification of children who are at particular risk for reading disabilities. Given such early identification, these children may be enrolled in intervention programs directed at preventing or limiting reading disabilities.

IMPACT

The results of this project are having an impact through a variety of dissemination efforts. Our results have been presented as part of workshops or papers at 6 national and 21 state/regional conferences in 5 countries and 18 states or provinces during the last 3 years. The results of this project have also been published in 3 refereed journals and 3 book chapters. To date, approximately 60 requests from 13 countries have been made for reprints of these articles.

As a result of these dissemination efforts, this project has begun to have an impact on educational and clinical practice. Educators and clinicians have been alerted to the potential risk for reading disabilities of children with speech-language impairments and many are now using this knowledge/awareness in their practice. In addition, measures of phonological awareness and rapid naming have begun to be incorporated into kindergarten/preschool screening or assessment batteries in a number of school systems. Specific materials and instructions have been provided to practitioners in workshops and through other correspondences.

RECOMMENDATIONS

Research should continue to be directed at the early identification of reading disabilities. The impact of reading disabilities on academic, social, and occupational success can be tremendous. Because of the growing consequences of a reading disability, early efforts at intervention have the potential of being more successful and cost effective. Research into the early identification of reading disabilities should continue to focus on the language variables considered in this project. While phonological awareness and rapid naming have been investigated in numerous studies, much further investigation is necessary in order to understand the nature of the relationship of these variables to reading achievement. Research will also need to consider language variables not investigated in this study. For example, this research might consider the role of morpho-syntactic awareness/abilities or early literacy experiences in predicting reading achievement. Current research has also begun to specify more clearly visual-perceptual factors associated with reading disabilities. These factors will need to be considered in work on early identification.

Beyond early identification, research needs to focus on intervention. If we are successful in identifying children at risk for reading disabilities, we need effective treatment programs in which to enrolled these children. One promising line of research involves the training of phonological awareness. As indicated by this project, deficits in phonological awareness often are associated with early reading problems. Research has begun to suggest that we can teach phonological awareness and this training will have a positive effect on reading achievement. While a number of studies have documented the positive effects of phonological awareness training, only a few studies have involved children specifically at risk for reading disabilities. Most studies have sampled from a large cross-section of children. Future studies will need to examine the effectiveness of phonological awareness training in at-risk children, such as those with speech-language impairments. In addition to this work, research will also need to examine other factors in early intervention. These may include other forms of language intervention, as well as interventions directed at other areas. It is through such efforts that we may reduce the negative consequences of a reading disability.

REFERENCES

Allington, R.L. (1983). Reading instruction provided readers of differing reading abilities. The Elementary School Journal, 83, 548-559.

Aram, D., & Nation (1980). Preschool language disorders and subsequent language academic difficulties. Journal of Communication disorders, 13, 159-170.

Biemiller, A. (1977-1978). Relationships between oral reading rates for letters, words, and simple text in the development of reading achievement. Reading Research Quarterly, 13, 223-253.

Bishop, D., & Adams, C. (1990). A prospective study of the relationship between specific language impairment, phonological disorders, and reading retardation. Journal of child Psychology and Psychiatry, 21, 1027-1050.

Blachman, B. (1984). Relationship of rapid naming ability and language analysis skills to kindergarten and first-grade reading achievement. Journal of Educational Psychology, 76, 610-622.

Bradley, L., & Bryant, P. (1983). Categorizing sounds and learning to read: A causal connection. Nature, 301, 419-421.

Bradley, L., & Bryant, P. (1985). Rhyme and reason in reading and spelling. International academy for research in Learning Disabilities Monograph Series, No. 1. Ann Arbor, MI: University of Michigan Press.

Catts, H. (1989). Phonological processing deficits and reading disabilities. In A. Kamhi & H. Catts (eds.), Reading disabilities: A developmental language perspective. Boston: Allyn & Bacon.

Catts, H. (1991). Facilitating phonological awareness: Role of speech-language pathologists. Language, Speech, Hearing Services in the School, 22, 196-203.

Catts, H. (1993). The relationship between speech-language impairments and reading disabilities. Journal of Speech and Hearing Research, 36, 948-958.

Denckla, M., & Rudel, R. (1976). Rapid "automatized" naming (R.A.N.): Dyslexia differentiated from other learning disabilities. Neuropsychologia, 14, 471-479.

Hall, P., & Tomblin, J. (1978). A follow-up study of children with articulation and language disorders. Journal of Speech and Hearing Disorders, 43, 227-241.

Kail, R., & Leonard, L. (1986). Word-finding abilities in language-impaired children. ASHA Monographs, 25, 1-36.

Kamhi, A., & Catts, H. (1986). Toward and understanding of developmental language and reading disorders. Journal of Speech and Hearing Disorders, 51, 337-347.

Kamhi, A., Catts, H., Mauer, D., Apel, K., & Gentry, B. (1988). Phonological and spatial processing abilities in language and reading-impaired children. Journal of Speech and Hearing Disabilities, 23, 632-636.

King, R., Jones, C., & Lasky, E. (1982). In retrospect: A fifteen-year follow-up report of speech-language disordered children. Language, Speech, and Hearing Services in the School, 13, 24-32.

Mann, V., & Liberman, I. (1984). Phonological awareness and verbal short-term memory. Journal of Learning Disabilities, 17, 592-599.

Menyuk, P., Chesnick, M., Liebergott, J., Korngold, B., D'Agostino, R., & Belanger, A. (1991). Predicting reading problems in at-risk children. Journal of Speech and Hearing Research, 34, 893-903.

Rosner, J. (1971). Phonic analysis training and beginning reading skills. Pittsburgh, PA: University of Pittsburgh Learning Research and Development Center Publication Series.

Stanovich, K. (1985). Explaining the variance in reading ability in terms of psychological processes: What have we learned? Annals of Dyslexia, 35, 67-96.

Stanovich, K. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. Reading Research Quarterly, 21, 360-406.

Stanovich, K., Cunningham, A., & Cramer, B. (1984). Assessing phonological awareness in kindergarten children: Issues of task comparability. Journal of Experimental Child Psychology, 38, 175-190.

Tallal, P., Curtiss, S., & Kaplan, R. (1989). The San Diego longitudinal study: Evaluating the outcomes of preschool impairment in language development. Final Report, NINCDS, Washington, DC.

Thomson, M. (1984). Developmental dyslexia: Its nature, assessment, and remediation. London: Edward Arnold.

Torgesen, J. (1991). Studies of children with learning disabilities who perform poorly on memory span tests. In J. Torgesen (ed.), Cognative and behavioral characteristics of children with learning disabilities. Austin, TX: Pro-Ed.

Treiman, R., & Baron, J. (1983). Phonemic-analysis training helps children benefit from spelling-sound rules. Memory and Cognition, 11, 382-389.

Wagner, R., & Torgesen, J. (1987). The nature of phonological processing and its causal role in the acquisition of reading skills. Psychological Bulletin, 101, 192-212.

Wiederholt, J.L., & Bryant, B.R. (1986). Gray Oral Reading Test—Revised. Austin: Pro-Ed.

Wolf, M. (1982). The word-retrieval process and reading in children and aphasics. In K. Nelson (Ed.), children's language (Vol. 3) (pp. 436-493). New York: Gardner Press.

Wolf, M. (1984). Naming, reading, and the dyslexias: A longitudinal overview. Annals of Dyslexia, 34, 87-115.

Wolf, M. (1986). Rapid alternating stimulus naming in the developmental dyslexias. Brain and Language, 27, 360-379.

Woodcock, R.W. (1987). Woodcock Reading Mastery Tests—Revised. Circle Pines, MN: American Guidance Service.

Table 1

Test battery administered to subjects in kindergarten, first and second grades

---

Standardized Speech and Language Measures (kindergarten)

- Peabody Picture Vocabulary Test
- Test of Language Development 2 - Primary
- Token Test for Children: Part V
- Expressive One Word Vocabulary Test
- Structured Photographic Expressive Language Test - 2
- Goldman-Fristoe Test of Articulation

Experimental Language Tests (kindergarten)

- Phonological Awareness
  - ▸ Deletion
  - ▸ Blending
  - ▸ Phonological Oddity

- Rapid Naming
  - ▸ Objects
  - ▸ Colors
  - ▸ Animals

- Verbal Short-term Memory
  - ▸ Word Memory
  - ▸ Digit Memory
  - ▸ Sentence Memory

Reading Tests (First and Second Grades)

- Woodcock Reading Mastery Tests
  - ▸ Word Identification
  - ▸ Word Attack

- Gray Oral Reading Test

Table 2

Partial correlations between kindergarten experimental language measures and first grade reading measures (N = 72)

	Word Id	Word Attack
Phonological Awareness		
Deletion	.58	.59
Blending	.48	.50
Phonological Oddity	.32	.32
Verbal Short-term Memory		
Sentence Memory	NS	.34
Digit Memory	.25	.32
Word Memory	NS	.27
Rapid Naming		
Rapid Naming of Colors	.42	.31
Rapid Naming of Objects	.37	.31
Rapid Naming of Animals	.45	.37

Correlations for rapid naming and digit and word memory tasks expressed in absolute values.

Table 3

F-values, level of significance, and percentages of correct classification of good and poor reader groups in first grade (N = 72)

	F-value	Significant Level	Percent Classified
Phonological Awareness			
Deletion	25.4	.001	71.0
Blending	9.3	.01	61.1
Phonological Oddity	5.2	.05	63.9
Verbal Short-term Memory			
Sentence Memory	5.1	.05	66.7
Rapid Naming			
Rapid Naming Colors	9.6	.01	65.3
Rapid Naming Animals	8.7	.01	64.8

Table 4

Correlations between kindergarten experimental language measures and second grade reading measures (N = 65)

	Word Id	Word Attack	GORT
Phonological Awareness			
Deletion	.54	.61	.54
Blending	.43	.53	.45
Phonological Oddity	.36	.46	.40
Rhyme Production	.28*	.30	.42
Verbal Short-term Memory			
Sentence Memory	.27*	.45	.45
Digit Memory	.25*	.38	.35
Word Memory	NS	.30	NS
Rapid Naming			
Rapid Naming of Colors	.40	.37	.41
Rapid Naming of Animals	.42	.38	.39
Rapid Naming of Objects	.37	.43	.42

*$p < .05$. Correlations for rapid naming and digit and word memory tasks expressed in absolute values.

Table 5

F-values, levels of significance, and percentages of correct classification of good and poor reader groups (N = 65)

	F-value	Significant Level	Percent Classified
Phonological Awareness			
Deletion	14.3	.001	70.8
Blending	8.4	.01	64.6
Phonological Oddity	7.0	.05	63.1
Rapid Naming			
Rapid Naming Colors	6.2	.05	61.5
Rapid Naming Animals	5.3	.05	61.5
Rapid Naming of Objects	5.5	.05	61.5

Table 6

Correlation coefficient between the measures on the screening battery and the tests of reading achievement in Study 2

	Word ID	Word Attack	Gray Oral Reading
Deletion	.65	.64	.60
Blending	.51	.63	.52
Rapid Naming of Animals	.56	.31	.44
Rapid Naming of Objects	NS	NS	.38

Table 7

F-values, levels of significance, and percentages of correct classification of good and poor reader groups in first grade for Study 2 (N = 41)

	F-value	Significant Level	Percent Classified
Deletion	21.5	.001	75.6
Blending	20.2	.001	78.1
Rapid Naming of Animals	5.1	.05	61.5
Rapid Naming of Objects	1.7	NS	53.7

Figure 1

DELETION TASK

The procedures are similar to Rosner (1971). The child is shown a picture of a cow and a boy and asked to say "cowboy". After the child responds, the examiner covers the cow and says, "Now say cowboy without the cow." The procedure is repeated with a picture of a tooth and a brush (toothbrush) and a cup and a cake (cupcake). If the child fails a practice item, the examiner provides the appropriate response. After completing the practice items, testing proceeds to the items below. No pictures are used for the test items. Testing is discontinued following 6 consecutive errors.

Test items:

1. *base*ball
2. *hair*cut
3. *Sun*day
4. *rail*road
5. *some*time
6. *re*turn
7. *a*round
8. *mo*tel
9. *al*most
10. *help*ful
11. *ba*by
12. *per*son
13. *mon*key
14. *f*at
15. *s*eat
16. *sh*out
17. *t*all
18. *d*oor
19. *f*/ju/
20. *s*nail
21. *th*read

Figure 2

BLENDING TASK

The child is introduced to a puppet and told, "This puppet does not talk very well. He says words one sound at a time. Your job is to say the words the right way. For example, if the puppet says reindeer, you would say reindeer. Let's try it." The child attempts the practice items with feedback. Testing then proceeds to the test items. Corrective feedback is provided. Testing is discontinued after 6 consecutive errors.

Practice items: bed room suit case snow man

Test items:

1. birth day
2. air plane
3. mo ther
4. pen cil
5. pa per
6. dol lar
7. for get
8. lit tle
9. af ter
10. g ood
11. b ug
12. f un
13. sh irt
14. s ing
15. t op
16. s oa p
17. f eet
18. c oa t
19. f i sh
20. f r ui t
21. s m o ke

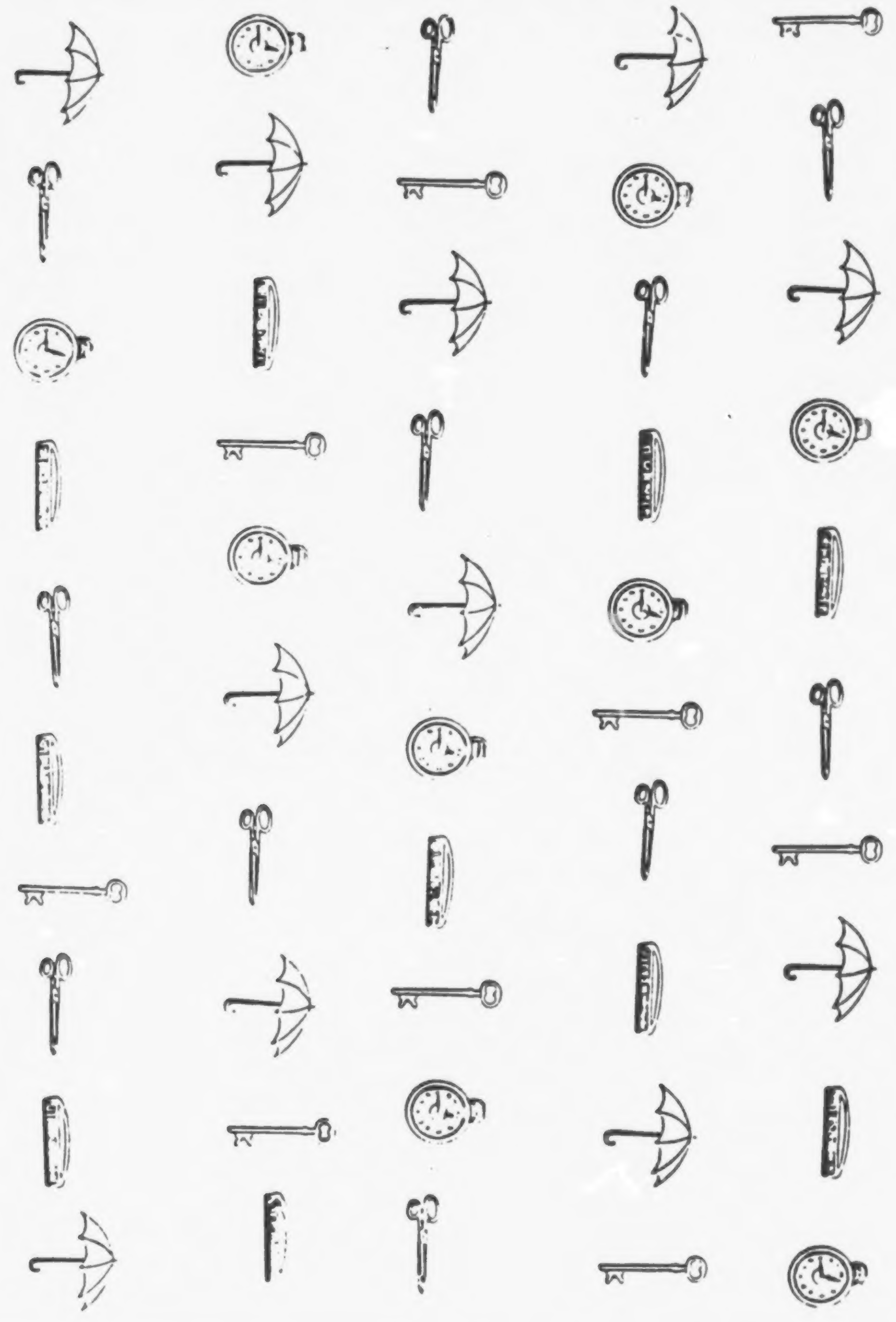
Figure 3

Rapid Naming of Animals

blue pig	black horse	red pig	black cow	blue horse	red cow
black pig	red pig	red cow	black horse	blue pig	red horse
black horse	red cow	blue horse	black pig	blue cow	red horse
black cow	blue cow	black pig	blue horse	red pig	blue cow

Figure 4

Rapid naming of objects



PROJECT 4.2

THE ROLE OF PROFESSIONALS IN SUCCESSFUL TRANSITIONS

Winnie Dunn, Ph.D., Department of Occupational Therapy

TARGETED TRANSITION PROBLEM

Professionals play a key role in the services provided to children and families, and can make a difference in how the transition from one school to another is carried out. This project addressed the contribution of the team members to the transition process, specifically the transition from preschool programs to public school programs.

OBJECTIVES

This project had three objectives:

4.2-1 To identify roles of key professionals in segregated and integrated infant, preschool, and primary school programs.

4.2-2 To identify those transition needs of children and families that are compatible with perceived professional roles and those that are not met with present professional roles.

4.2-3 To develop intervention strategies that enhance professionals' use of already present transition skills and promote other needed skills needed for successful transition.

BACKGROUND

The studies conducted within this project addressed how professionals handle the transition process and investigated possible ways to improve transition planning. A key factor in the planning process is the creation and implementation of the Individualized Education Plan (IEP). The professionals who took part in this study were unfamiliar with the transition issues at the beginning of the project, and so the researchers also addressed methods for increasing professionals' knowledge and abilities to participate in the transition planning process. Three factors were addressed as part of the project: (a) the IEP process, (b) the transition process, and (c) the preparation process for the professionals.

THE INDIVIDUALIZED EDUCATION PLANNING (IEP) PROCESS

Public Law 94-142, the Education for All Handicapped Children Act of 1975 (EHA), and the 1986 Amendments to the EHA, Public Law 99-457 (recently amended again as P.L. 102-119 and now the Individuals with Disabilities Education Act, IDEA) mandate that all children with special needs be provided with an individualized program to meet these needs. Teams serving infants, toddlers and their families are required to develop an Individualized Family Service Plan (IFSP), while teams serving preschoolers and school-age children are required to develop an

Individualized Education Plan (IEP). These documents are to be created at a team meeting, and serve as a written agreement among the team members, including the parents, about the program to be implemented to serve the child's and family's needs (Ryan & Rucker, 1991). The IFSP and IEP processes serve as the cornerstone of the operationalizing of the federal mandates to serve children and families.

In the years following enactment of P.L. 94-142, researchers studied the IEP planning process. In these early years, researchers found that both parents (Goldstein & Turnbull, 1980) and classroom teachers (Ysseldyke et al., 1981; Pugach, 1982) seemed to have little input into the planning process. This low level of active participation was thought to be due to a number of factors, including perceptions of roles (Yoshida et al., 1978; Kaufman, 1982), role confusion (Crossland et al., 1982), inaccurate beliefs regarding parental needs (Gibson & Young-Brockopp, 1982), and status rankings among team members (Gilliam, 1979). In one early study, Ysseldyke et al. (1982a) were able to show that parents were asked for their input only 27% of the meetings observed, and later research yielded similar findings for regular classroom teachers (Ysseldyke et al., 1982b). The results of these investigations prompted a number of writers to propose strategies for enhancing the role of parents in the IEP process (DiMeo et al., 1981; Goldstein & Turnbull, 1982).

More recent work includes an examination of the IFSP process and the involvement of families in the planning process. Researchers suggest that teams continue to have difficulty employing families in an active participant role (e.g., Nash, 1990; Turnbull & Winton, 1984; Bailey, 1984). Garshelis and McConnell (1993) found that teams continue to be inaccurate in their assessments of family needs, and that individual disciplines within those teams do an even poorer job. DeGangi et al. (1992) found that both parents and professionals expressed a need for communication, listening and flexibility in the planning process.

It may be necessary to restructure the methods for conducting planning meetings to address these concerns more effectively. In order to make accurate decisions about adaptations in the planning process, it is important to have a precise picture of current activities. The purpose of this KECRI project was to examine the IEP planning process as it actually occurred in three community preschool programs. The study investigated both the IEP meeting and the IEP document as representative items of the process and the product, respectively, of the IEP procedures (DeGangi et al., 1992).

THE TRANSITION PROCESS

Rice and O'Brien (1990) defined transitions as "points of change in services and personnel who coordinate and provide services" (p. 2). During the infant and early childhood years, children with disabilities and their families may have to contend with numerous changes associated with services and service availability (Noonan & Ratokalau, 1991). Stresses experienced by family members of a child with disabilities are often intensified during transitions because of changes in routines and daily schedules and the alteration of family interaction patterns with familiar service providers (Hains, Fowler, & Chandler, 1988).

Families must consent to communication between sending and receiving programs (e.g., between the early intervention and special preschool program) and must be included in the transition planning process from the beginning (Rosenkoetter, 1992). Wilson and Thurman (1990) stated, "What still remains to be determined is the exact nature of involvement and the degree to which parental involvement is instrumental in effecting specific outcomes within the transition process." Although parents may be involved, they are not necessarily empowered (Wilson & Thurman, 1990). Parents possess skills to deal with transitions, including a thorough awareness of their child's needs, and they should be able to state these needs to professionals in sending and receiving programs. General knowledge of the options in the community gives parents an important advantage in decision-making for early educational placement (Kilgo et al., 1989). Families need to be utilized as a source of support for the child in transition planning because they perform many roles including teacher, decision-maker and advocate. They serve as a bridge across the two programs by emphasizing the critical skills necessary to deal with the change effectively (Hains et al., 1988). "Through introduction of future planning, movement to the next environment can be approached gradually and with sufficient preparation of children and their families" (Kilgo et al., 1989, p. 42).

Professionals can assist parents by helping them identify their needs, values and expectations regarding their child's education (Hains et al., 1988). As shown by McDonald, Kysela, Siebert, McDonald, and Chambers (1989), there are several recommendations that should be considered by teachers and agencies during the transition process concerning family needs, values and expectations. First, they suggest that professionals and families begin transition planning at least six months prior to changing schools. Second, after describing what transition entails, these authors suggest that professionals ask the family how they would like to be involved in the transition planning process, and respect the family's choices regarding their level of involvement. Third, they recommend that professionals provide follow-up support to the families and staff of the new program. Fowler (1988) and Hains et al. (1988) suggest that when possible, the sending program should prepare the child with skills that will be needed in the new program.

P.L. 99-457 and P.L. 102-119 require the inclusion of a written transition plan in the IFSP to address concerns the family has about future program services (Noonan & Ratokalau, 1991). In order to participate in this process, parents need knowledge of their child's strengths and weaknesses, an awareness of placement options, and knowledge of their legal rights (Kilgo, Richard, & Noonan, 1989). Service providers are responsible for providing this information to families. Service providers are also required to establish transition plans, procedures and a timeline of events in the transition process. According to McCollum and Bailey (1991), theadequacy of preparation of early intervention personnel will determine the success of the legislation. Personnel preparation and training will need to focus on family systems theory,. family and child assessment, participation on interdisciplinary teams, interagency collaboration, and case management (Bruder & Nikitas, 1992). Clearly all of these areas are implicated in the transition process. However, "the problem of transition is rarely mentioned in the formal education that prepares practitioners for their work" (Rice & O'Brien, 1990, p. 1).

THE PREPARATION PROCESS FOR THE PROFESSIONALS

The two major training strategies that have been used in personnel preparation are preservice programs at universities and inservice programs provided as a continuing education or skill enhancement mechanism (Bruder & Nikitas, 1992; McCollum & Bailey, 1991). Bruder and

Nikitas (1992) recommended that specific competencies for early intervention practitioners be written and incorporated into the states' licensure or certification standards for the various disciplines included in P.L. 99-457. This would in turn have a direct impact on preservice programs provided by state universities. Ongoing professional development must be part of a comprehensive state plan (Winton, 1990; McCollum & Bailey, 1991; Bruder & Nikitas, 1992). "Family focus, team process and case management all represent departures from traditional ways professionals have provided services to children with disabilities and their families" (Winton, 1990, p.51). Staff development through inservice training is needed to provide information and skill enhancement for those professionals already working as early interventionists.

Bruder and Nikitas (1992) described an inservice training model based on the principles of adult learning. The model incorporates seven elements involving active trainee participation. The use of this model resulted in increased knowledge in topic areas presented and documented changes in early intervention practice. "Results from the three years of project implementation strongly suggest that changing the professional practices of early intervention requires collaborative training activities which include demonstration, feedback, long term support and ongoing evaluation" (Bruder & Nikitas, 1991, p. 179). McCollum and Bailey (1991) suggested that mentoring and technical assistance could also be incorporated into training programs.

Noonan and Ratokalau (1991) specifically addressed transition in staff development activities. Knowledge and performance competencies included an overview of the transition process, transdisciplinary teaming, family support, and child advocacy. Initially formal workshops were planned; however, informal activities (e.g., informational meetings with videotapes, demonstrations, and modeling with feedback) were found to be more effective. These findings concur with those described by Bruder and Nikitas (1992).

METHODS

Although smaller studies were conducted to identify key variables for analysis, there were two main themes for investigation. First, the researchers completed an in-depth analysis of the IEP process as a method to capture both the amount of attention to transition issues and to characterize the operation and outcomes of this process. Second, the researchers analyzed the effects of an intervention to improve the transition activities in each school, employing the same subjects and sites, and based on the same IEP meeting and document data as the IEP process investigation. Outcomes will be reported and discussed separately for the IEP process study and the intervention study.

SUBJECTS

The subjects were selected from three special preschool programs in a large metropolitan area (Greater Kansas City). These programs serve children with various developmental delays from birth to eight years of age. Site A is a community-based program serving children with visual impairments. Site B is a community-based program serving children with developmental delays. Site C is a public school preschool program for children with a variety of developmental delays.

Each year, the researchers randomly selected four subjects from each preschool site (n = 12 per year). The study proceeded for three consecutive school years: 1989-90, 1990-91, and 1991-92.

To participate in the study, a subject had to meet four criteria:

a. The child was eligible to move to a new school at the end of that school year.
b. Parents or legal guardians gave written permission for their child to participate.
c. The child was receiving two or more professional services in addition to preschool programming.
d. The child had a written Individualized Education Plan (IEP).

Each fall for the three years, staff in each program created a list of all potentially eligible children for that school year. The researchers randomized the lists, and each preschool contacted the families until they had four participants from their school that met the eligibility criteria.

The initial subject pool for this study was 36 children (four children each year from each of three preschools, for three years), ranging in age from 4 to 7 years. Five of those children were unable to complete the study and were dropped. Meetings for an additional eight of the children were not tape-recorded and could not be included in the analyses. Thus, for the final sample, transcripts were analyzed for 23 children—15 boys and 8 girls.

PROCEDURES

The study was initiated by contact with the Program Directors of the three preschool sites to set up meetings between the site staff and the researchers to discuss the research project. At these meetings, the researchers described the purpose of the study and the process for selecting the subjects.

Each site provided a list of children who met the criteria for participation in the study, and children were randomly selected from this list for participation. Researchers sent a written description of the research procedures and a consent form to each parent/legal guardian of the first four children on the random list. Parents were assured in writing that all information collected from the tape-recorded meetings regarding their child would be coded and kept confidential. If consent was not given for a child's participation, the researchers sent the forms to the next child on the random list. This procedure was followed until there were four children from each site.

Program staff at each site also signed consent forms regarding their participation in the study.

Data Collection

Each site had a standard audiotape recorder available for use in the study. Researchers provided the three sites with audiocassettes to record every meeting that took place regarding one of the target children. The preschool staffs recorded formal IEP meetings, staff meetings, and informal staff meetings regarding the target children. At the start of each tape, participants identified themselves by name and profession to ensure accuracy of coding. Members of the research staff were not present during the meetings, so as not to influence the group process or outcome of meetings. The program staff also sent a copy of the IEP document to the researchers.

Data Coding

Researchers transcribed each recorded meeting and then analyzed the transcripts using the Statement Summary Form designed for this purpose. This form allowed analysis across two variables:

1. **Which participants talked at the meeting.** Participants in the meeting identified themselves at the beginning of the meeting tape so that the transcriber could indicate who was talking during the meeting. Categories of participants in these meetings were: teacher, parent, occupational therapist, physical therapist, social worker, speech-language pathologist, program director and Braille instructor. An other category included individuals who were present but did not fit into the standard categories.

2. **The content area addressed in each utterance**. The topic areas on the Statement Summary Form covered those curricular domains commonly addressed in preschool programs serving children with developmental delays. Nine coding categories were used. Six of these were developmental categories: gross motor, fine motor, language, social skills, self care, and cognition. There were three additional coding categories: acknowledgement, for utterances that affirmed another's comments without adding information; transition, for utterances that discussed the child's movement to the new school, expected changes, etc.; and other, for utterances that did not fit the above categories.

Researchers also categorized the goals on the IEP document according to the same content categories as used for the IEP meeting transcript analysis. The category acknowledgement was not functional in this analysis, so only eight categories were used.

Interrater reliability

Research assistants were trained in the coding procedures and use of the Statement Summary Form, and coded segments of selected transcripts to learn how to implement the procedures correctly. During training, researchers coded test transcripts independently and then computed percentage agreements across researchers. Interrater reliability of transcript coding for each data collection period was greater than 95%. Approximately one third of the study transcripts was coded by two persons, and this level of interrater reliability was maintained.

Intervention Component

Researchers collected baseline data during the 1989-90 school year. Following analysis of these data, the senior investigator of the research project visited each site to provide feedback regarding the data collected and to plan site-specific strategies that might address the transition procedures being used by that site. Following the 1990-91 school year, the senior investigator did not provide on-site inservice training, but was available by phone for consultation. This resulted in an ABA single-subject research design for this study.

Data analysis. Researchers completed a descriptive analysis of the utterances made at the IEP and staff meetings. Coding categories had been defined prior to data collection (see **Coding data**, above), and the data from the transcripts were coded into these categories; i.e., each utterance made during the meetings was coded according to the person speaking and the topic of the utterance. The written IEP documents were similarly coded for content area of each goal.

Total number of utterances (for the meeting transcripts) and total number of goals (for the IEP documents) for each content category were transformed into percentages for comparison purposes. Researchers used a Wilcoxon Matched-Pairs Signed-Ranks Test to compare the percentages of written goals and utterances about the corresponding developmental areas on the matched pairs of meeting transcripts and IEP documents.

Additionally, the researchers compared the occurrences of discussion about transition across each of the three years as one indicator of the impact of the inservice and planning sessions in improving transitions. Further data to substantiate a positive impact came from the teachers at the post-transition site, through interviews.

OUTCOMES

Thirty-six subjects were potentially available for this study; 23 subjects were represented in the final data set — five subjects were unable to complete the study because they moved to another preschool, and recordings were not available for eight other children. Because many of the teams had more than one IEP meeting about the target children, 42 transcripts (18,701 utterances) and 37 IEP documents (634 goals) were available for analysis.

ANALYSIS OF THE IEP PROCESS

Table 1 summarizes the distribution of utterances made during the IEP meetings. The table contains marked numbers that represent the top two contributors to each curricular area and the top two curricular areas discussed by each person, illustrating a pattern of contributions to the IEP meeting process. The other category had the highest number of utterances overall. Parents and teachers made the most contributions to the overall meeting. Teachers' contributions were spread across all categories, with socialization and other being the highest; parents made the most contributions by acknowledging others and making utterances that fell into the other category. Occupational and physical therapists made the highest contributions in the gross and fine motor categories, while adaptive physical educators also contributed to gross motor discussion. Social workers discussed socialization and other topics the most. Speech-language pathologists discussed language and other topics, while the Braille specialist discussed fine motor and other topics the most. Program administrators from the preschools and from the elementary schools discussed transitions and made other utterances most frequently.

Figure 1 compares the distribution of utterances made at IEP meetings with the distribution of goals documented on the IEP itself. In some cases, there was a relatively higher number of written goals addressing a content area compared to the number of utterances made about that content area during the IEP meeting (gross motor, fine motor, language, self care, cognition), while in other cases, there were proportionately more utterances made about an area than there were goals written for that area (e.g., socialization, other). There were no specific transition goals on these IEPs (and the acknowledgement category was inapplicable for the written document).

The results of the Wilcoxon Matched-Pairs Signed-Ranks Test revealed that, on the topics of cognition and socialization, the frequency of utterances was significantly different from the frequency of written goals. In the cognitive area, there were significantly more cognitive goals written on the IEPs than there were utterances about cognition made during the meetings (p = .0043, two-tailed). However, in the socialization area, there were significantly more utterances about socialization than there were goals written about socialization on the IEP (p = .0005, two-tailed).

INTERVENTION TO IMPROVE TRANSITION ACTIVITIES

Forty-two transcripts were analyzed, yielding a total of 18,701 utterances collected and coded over the three years of the study. Figure 2 summarizes the distribution of these utterances across topic areas. The area accounting for the largest percentage of utterances was the section coded other (20%), i.e., those utterances that did not fit in any of the other designated topic areas. The following topics were discussed at meetings (in descending order): fine motor (16%); social (13%); transition (10%); language (10%); gross motor (9%); cognition (9%); acknowledgement (8%); and self care (5%).

Looking specifically at the three-year total of transition utterances, Figure 3 presents the distribution across meeting participants. The majority of transition utterances were made by the teacher (32%). Twenty-six percent of the transition utterances were made by professionals coded as other. This category included mainly school psychologists and school principals from the post-transition settings. Parents made 14% of the transition utterances, and the program directors from the preschools made 13% of the transition utterances. Speech-language pathologists contributed 5% of the transition utterances. Social workers and Braille teachers each made 2 % of the transition statements. Physical therapists and adaptive physical education teachers each contributed less than 1% of the transition utterances.

Figure 4 represents the total percentages of transition utterances at meetings during each of the three years of the study. During the baseline year of the study (1989-90), only 5.2% of the total utterances were about the child's transition to a new setting. During the intervention year (1990-91), each preschool received inservice feedback and program planning sessions; at the end of that year, 14.8% of the utterances addressed transition issues. During year 3 (1991-92), the preschool programs received no on-site intervention, but the Principal Investigator was available by phone; 7.5% of the utterances made at meetings that year were about the child's transition.

Figure 5 summarizes the percentage of transition utterances at each of the three preschool sites independently for the three years of the study. The percentage of transition utterances made at each of the sites increased from the first-year baseline percentage in the intervention year (1990-91), and then decreased during the final year (1991-92). Side B did not record their meetings during the reversal year, and so a percentage of transition utterances could not be calculated.

Finally, the researchers asked the teachers at the new schools a set of questions about how they perceived the transition and their preparation for this child to be in their classrooms. Teachers felt more positively about their preparedness during the year when more discussion about the transition occurred. Figure 6 displays the differences in the baseline and intervention years on two of the questions posed to the teachers.

IMPACT

ANALYSIS OF THE IEP PROCESS

The results of this study provide indications about the IEP process and what may actually be going on within community-based teams such as those represented in this study.

IEP Meetings

Discipline-specific team members are contributing the most to discussions about their characteristic areas of expertise. Occupational and physical therapists and adaptive physical educators all contributed greatly to discussions about gross motor development. Speech-language pathologists contributed the most to discussions about the children's language development. It is interesting to note that the Braille specialist contributed substantially to the fine motor development discussion but contributed only a small amount to the language development discussion. It had been anticipated that the Braille specialist would participate actively in the language discussion, since Braille is a form of communication. However, at the preschool level, the children are learning how to identify the symbols with their fingers, which is a fine motor task.

It is possible that decision-making processes are affected when discipline roles are clearly delineated in meetings. Bailey & Simeonsson (1984) suggest that it would be ideal for team members to have equal influence on the group process. Fiorelli (1988) found that individuals perceived to be experts had a greater influence on decision making. This can lead to a situation in which other team members, including parents, take on an inferior role in the group (Nash, 1990). When this occurs, the team can miss important input because the team member who feels inferior may not actively participate, seeing the endeavor as pointless (Gilliam & Coleman, 1981; Bailey, 1984). Teams must actively work to ensure that use of discipline expertise does not interfere with parent participation (Nash, 1990) as they provide input from their unique points of view.

The preschool teachers in this study talked a great deal in all the content categories. Experience and the literature (e.g., Nash, 1990; Gilliam, 1979) would suggest that teachers in elementary schools may be more passive in IEP meetings than these data for younger children indicate. Perhaps preschool teachers are more active in the process of initial identification of the child's needs, and so feel more involved in the overall process of education planning for the children.

The curriculum in preschools is more inclusive of developmental variations, and so it may be easier to consider interdisciplinary ideas within the typical preschool curricular framework than in an elementary classroom in which the teacher feels pressured to ensure the children meet specific competencies for academic and social development.

Initially it was somewhat surprising that the other category contained one fifth of all the utterances made during these meetings. In fact, for all but two of the participants (occupational and physical therapists), the other category was either the first or second highest area of contribution. If the IEP meeting is to meet the expectations of the law, it is supposed to be a time for the team to develop the individualized plan for the child, and therefore one would expect a higher distribution of utterances in the child's area(s) of need. The Principal Investigator in this study obtained feedback from the teams about this occurrence: the teams consistently stated that the other comments reflected an attempt to establish rapport with the family. This category included conversations about other children in the family, events taking place in the community, and areas of common interest between a parent and one or more of the professionals.

To follow up on the possibility that the team members were establishing rapport at these meetings, the Principal Investigator reviewed data collected from staffing meetings (meetings of team members to review progress and programming strategies) for the 1990–1991 school year. Parents were not present at four staffing meetings, and so it was possible to examine whether the amount of other talking decreased, perhaps indicating that rapport was a focus of the discussions when parents were present at the IEP meetings. When parents were absent from staffing meetings, only 10% of the utterances fell into the other category. This difference is tentative due to the small number of staffing meetings with parents absent, but it does suggest that the issue of rapport-building may be important at IEP meetings. Nash (1990) points out that families' needs change over time, and so professionals must remain open and flexible to family needs for participation. Rapport-building is one strategy for keeping track of parents' status.

Parents made the second highest number of utterances (16% of the total utterances), but their utterances clustered in the other and acknowledgement categories (representing 46% of their utterances). This suggests that parents are frequently discussing unrelated topics without actively contributing to their child's plan. This profile does not suggest a family-centered planning session, but rather a more traditional meeting in which the professionals present information according to discipline expertise, which may minimize parental influence on decision-making (Gilliam & Coleman, 1981).

Comparison of IEP Meeting and IEP Document

If the IEP meeting is to be a time to create the IEP document as the law specifies, then there should be congruence between the activities during the IEP meeting and the resulting document. Figure 1 illustrates that there were some differences between this set of IEP documents and the associated IEP meetings.

The Principal Investigator obtained feedback from the teams about these data. The teams reported that the amount of discussion necessary about particular needs varied with the goals being established for the child. For example, there were relatively more written goals in the area of self care compared with the amount of oral discussion about self care needs. Teams reported that many self care items for preschoolers are clear and self explanatory to the parents, and therefore do not require long discussions because everyone agrees that these are skills the child needs to acquire (e.g., putting on jacket, washing face, brushing teeth).

Another issue that the teams raised was the *families' familiarity with the curricular process.* Many of the children had been attending these preschool programs for two to four years, and so the parents were more familiar with the course of the child's development and reasonable expectations in these areas than might otherwise be presumed. Cognitive development, for example, is a complex process; the details of cognitive milestones and expectations might not be familiar to typical parents. However, these teams believed that their parents were more familiar with their child's cognitive development because they had discussed it at length at earlier meetings. If the parents were comfortable with their knowledge about the developmental areas and/or had a high level of trust in the capabilities of their child's team, this might also lead to the higher number of acknowledging utterances. An alternative interpretation is that parents indeed did not understand these areas (e.g., cognition) or they would have made more substantive contributions.

There was proportionately more oral discussion about socialization than there were goals written about it. Socialization was the third highest area of contribution by the parents as well. This pattern suggests that the teams spent time negotiating the goals and strategies in this developmental area. Socialization is also an area that directly impacts daily interactions both at school and at home, increasing the interest for all the participants. Additionally, it is likely that the behaviors described by the professionals were understandable and familiar to the parents, enabling them to participate actively in the discussion.

There were no goals on these IEPs about the transition process itself. Transition seemed to be perceived as an administrative task (e.g., passing along the child's records, placing the child in an appropriate classroom) and therefore would not fit on an IEP whose purpose is to outline the child's specific curricular program. Perhaps teams felt that making the child's goals appropriate to particular abilities and needs served the child best in the transition process. Fowler and her colleagues (1986) conducted a pilot study and found that 44% of parents expressed lack of understanding but 87% wanted to share responsibility for transition planning. Perhaps it is important to discuss transitions as a mechanism to provide families with information and opportunities to discuss their concerns. Hains et al. (1985) point out that children must acquire new skills in new schools (e.g., meeting new teachers and therapists, learning new school routines), and so it may also be important to write transition goals for the child's adjustment during and after transitions.

General Considerations

The data from this study suggest that the IEP meeting serves a broader purpose than only to develop or review the individualized plan for the child (P.L. 94-142). It may be a vehicle for the team to build trust and familiarity with each other. This is also an important part of the process of serving children and families in an individualized manner.

It does appear that parent participation in IEP meetings may be more limited than would be optimal. Public Law 99-457 advocates a family-centered model for designing and providing services (Mahoney et al., (1990). Bailey and Simeonsson (1984) propose five reasons why families ought to be active participants in their child's educational planning:

1. Families have a right to participate according to our laws.
2. Parents have unique information about their children that is useful to planning.
3. Parents may express preferences about goals for their children.
4. Parents may use this forum to advocate for their children.
5. Parents who are knowledgeable about their children's programs can facilitate generalization during home activities.

Bailey (1987) suggests that parents and professionals may have different priorities. Steps might be taken to improve this circumstance. It may be useful to change the strategy for the IEP meeting process to close the potential gap between parent and professional priorities. Professionals could provide evaluation data prior to the meeting in a report to the parents with a follow-up phone call to discuss and clarify information for them. This would provide the parents with information about each discipline (Nash, 1990); they can then reflect on and combine these findings with their knowledge of their child prior to the meeting. This reflection time may provide an opportunity for the parents to link behaviors they see at home with strengths and concerns expressed in specific discipline reports. This strategy puts the parents on a more equal footing with the professionals; the parents are better able to form thoughts and ideas to express at the meeting because they know in advance the direction of thinking already taken by the professionals. DeGangi et al. (1992) identified communication, listening and a willingness to share concerns as important issues reported by parents and professionals in the IFSP process. If participants communicated in advance, the IEP meeting could then focus more explicitly on the program planning process, rather than on individual reports of findings. This meeting format would enable the parents to offer comments throughout the discussion, and may increase their ability to provide additional insights about their child that the professionals were unable to discover in the formal evaluation process (Bailey et al., 1984).

INTERVENTION TO IMPROVE TRANSITION ACTIVITIES

The results of this study suggest that providing the preschool sites with feedback regarding the data collected and site-specific training aimed at increasing the transition component of their program was effective. These results support the use of performance feedback and informal training sessions with active trainee participation as an effective method of changing professionals' behaviors (Bruder & Nikitas, 1992; McCollum & Bailey, 1991; Noonan & Ratokalau, 1991; Winton, 1990). The fact that this increase was not maintained is a concern and suggests that feedback and training may need to be combined with additional ongoing training methods to keep staff involved with the transition process.

These data also suggest that parents and professionals do not spend a great deal of time discussing transitions during IEP and staff meetings even when the child will be moving to a new school placement in the next school year. Instead, they spend time discussing topics not specifically related to the child's educational program or specific curricular areas (i.e., the other category, 20% of all the utterances). These conversations seemed to facilitate rapport-building among the meeting participants. Rapport-building can be especially important when the teachers and parents are meeting with representatives of the receiving school system, in order to facilitate the transition process for all people involved.

In this study, 10% of the utterances made in meetings were related to transition overall. These utterances usually reflected issues about the placement options, school locations, and the continuation of the special services the child was receiving. It could be argued that the curricular-specific utterances were also about the transition in a general way, because the participants were planning the level of learning that would be needed at the next school. However, considering the fact that teachers at the new schools felt more prepared when more attention was given to operationalizing the transition, it seems that discussing curricular needs may not be enough.

Limitations of the Study

This study was limited to data from three preschool programs in one city, and therefore may not be representative of the IEP process nationwide. Within these programs there is missing data as well. Some of the meetings that took place were not audiotaped by the preschool staff—for example, because they forgot to bring the tape-recorder to the meeting or, once there, forgot to turn it on. Additionally, during year 3, one of the preschool sites failed to audiotape any of the meetings held, resulting in no data for that site in the last data-collection period. Although a large number of utterances were collected during the study, the data in year 3 are not complete, which therefore limits the interpretation of the results.

A second limitation of this study was that for each year different research assistants analyzed the transcripts of the meetings. Each pair of new researchers was trained by the previous year's staff until they achieved interrater reliability greater than 90%. However, they were not necessarily reliable with the researchers from the earlier years. As a result it is possible that there were some differences in the coding procedures in the different years of the study.

There are certainly other ways that the transcripts of meeting discussions and the IEP documents could have been coded. For example, the written IEP goals were coded according to functionality and generalizability, using the method described by Hunt et al. (1986). However, it was difficult also to code the utterances by those same criteria. Audiotapes of the meeting discussions did not provide information about body language or other nonverbal cues that certainly contribute to the group process and would provide useful data.

A final limitation of this study was the difference in staffing patterns across the preschool sites and the variability in participant attendance at the meetings. Teachers were present at all of the meetings; no other participants attended every meeting. Parents attended all the IEP meetings but their attendance at staffing meetings was much lower, thus lowering their overall percentage of meetings attended to 69%. Other team members were present less consistently depending on individual children's needs, and varied across the three sites. For instance, Site A serves children with visual disabilities, and thus includes a Braille teacher at their meetings, while the other two sites did not. Similarly, Site B was the only site to include use an adaptive physical education teacher. The occupational and physical therapists at Site C used a more transdisciplinary approach, and so sometimes only one of the attended a particular meeting.

These differences in staffing patterns certainly influence the overall picture, and may have skewed the data by generating larger numbers of utterances for those who were present more regularly, and smaller numbers for those only present intermittently. Ratios would be a more indicative measure of participation; however, percentages were used when comparing the IEP meeting discussions with the IEP document goals.

RECOMMENDATIONS FOR FUTURE DIRECTIONS

Analysis of the IEP Process

It would be interesting to examine the possible differences between preschool and elementary school teams in their patterns of participation and emphasis during the IEP process. With the infusion of families who have participated in the IFSP process, it would also be interesting to compare the pattern of meetings with parents who have and have not participated in the more family-centered process advocated in the IFSP.

It may also be important to document the actual contributions that the IFSP and IEP processes make to the overall endeavor to serve children and families. Public Law 94-142, P.L. 99-457 and P.L. 102-119 emphasize the development of the child's individualized plan, and this purpose has been interpreted in a variety of ways in regulations and compliance standards across the states. McGonigel et al. (1991) remind us that the IFSP is both a product and a process. Teams must address the process by working to establish rapport and build a sense of trust in the common goals of serving children. It seems that service providers have sensed the importance of these factors and built them into their process. However, when the procedures do not reflect factors such as cooperation and trust, service providers may begin to perceive that they are engaging in two separate processes: one to fulfill the obligations of the law (Margolis et al., 1981) and the other to serve children and families. Sometimes service providers perceive procedures to fulfill mandates as nonproductive (Gerardi et al., 1984; Morgan & Rhode, 1983) because they seem separate from the daily tasks professionals perform to serve children and families. Perhaps we need to revisit the policies that support the intent of the law, and adapt them to reflect all the key elements that support optimal services to children and families.

Intervention to Improve Transition Activities

It was important to create an intervention that would be replicable after the research project was over. The teams responded very well to inservice time in which they received feedback about their performance, were given an opportunity to provide their own interpretations of the data, and were then provided with support to create a plan to improve the transition process. Perhaps school administrative systems need to build in natural opportunities to provide professionals with feedback about the impact of their decisions and actions on future outcomes with children and families. This study indicates that this feedback process served as a powerful enough catalyst to initiate positive changes in procedures for the subsequent year. However, the fact that this effect did not last past one year suggests that the school system needs to set up an ongoing mechanism for feedback and reflection to continue to stimulate improvements in services for children and families.

Transitions can be times when families need additional support; teams may need to take a more direct approach to addressing the issues that may arise for a family as their child moves from one school to the next. For example, many teams have set up communication strategies between common sending and receiving schools in their communities to facilitate transfer of information. Schools can set up times for families to visit new schools, or have a parent night to introduce families to the schools their children may be attending. Some schools have developed videotape libraries to provide working parents with an opportunity to observe various classroom environments. By raising these issues in a proactive manner, families can consider their own concerns and formulate their own questions prior to the actual transition.

Conclusions

The IEP and IFSP processes are complex, and have served children, families and team members favorably. Nearly 20 years after the enactment of P.L. 94-142, it is interesting to have an opportunity to reflect on the way the IEP process has been operationalized within preschool programs. Positive patterns emerge, but areas for continued improvements also present themselves. It will serve children and families better if the process that is actually functional within these service systems is more clearly presented and characterized in policies and procedures. It may be important to consider which policies are not reflective of the process and which actions by teams are not in families' best interests, so that an improved process can be delineated.

The results of the second part of this study suggest that intervention can have a positive effect on transition planning. By providing preschool program staff members with site specific performance feedback and collaborative training activities, we were able to increase the percentage of discussion about transition at team meetings. This increase was not maintained when the specific intervention was not provided in subsequent years. Further research is needed to investigate what methods might be employed to maintain the impact of training efforts over time.

REFERENCES

Bailey, D.B. (1987). Collaborative goal setting with families: Resolving differences in values and priorities for services. Topics in Early Childhood Special Education, 7, 59-71.

Bailey, D.B., & Simeonsson, R.J. (1984). Critical issues underlying research and intervention with families of young handicapped children. Journal of the Division for Early Childhood, 9, 38-48.

Bruder, M.B., & Nikitas, T. (1992). Changing the professional of early interventionists: An inservice model to meet the service needs of Public Law 99-457. Journal of Early Intervention, 16(2), 173-180.

Crossland, C.L., Fox, B., & Baker, R. (1982). Differential perceptions of role responsibilities among professionals in the public school. Exceptional Children, 48, 536-538.

DeGangi, G., Royeen, C.B., & Wietlisbach, S. (1992). How to examine the individualized family service plan process: Preliminary findings and a procedural guide. Infants and Young Children, 5:2, 42-56.

DiMeo, P.A., & Pasquarelli, P.A. (1981). Enhancing parental involvement in multi-disciplinary teams. Journal for Special Educators, 18, 39-44.

Fiorelli, J. (1988). Power in work groups: Team members' perspectives. Human Relations, 41(1), 1-12.

Fowler, S.A., & Others (1986). Individualizing family involvement in school transitions (Grant No. HCEE-024-BH-500009). Lawrence, KS: Life Span Institute.

Fowler, S.A., (1988). Transition planning. Teaching Exceptional Children, 62-64.

Garshelis, J.A., & McConnell, S.R. (1993). Comparison of Family Needs Assessed by Mother, Individual Professionals, and Interdisciplinary Teams. Journal of Early Intervention 17:1, 36-49.

Gerardi, R.J., Grohe, B., Benedict, G.C., & Collidge, P.G. (1984). I.E.P. - more paperwork and wasted time. Contemporary Education, 56, 39-42.

Gibson, J.M., & Young-Brockopp, D. (1982). The perceived vs. the expressed needs of parents of handicapped children. Paper presented at the Annual Meeting of the American Orthopsychiatric Association.

Gilliam, J.E. (1979). Contributions and status rankings of education planning committee participants. Exceptional Children, 45, 466-468.

Gilliam, J., & Coleman, M. (1981). Who influences IEP committee decisions? Exceptional Children, 47, 642-644.

Goldstein, S., & Turnbull, A.P. (1982). Strategies to increase parent participation in IEP conferences. Exceptional Children, 48, 360-361.

Hains, A.H., & Others (1985). Preparing teachers and children for transitions from special preschool programs to public school kindergartens. Presented at the National Early Childhood Conference on Children with Special Needs. (pp. 1-18). Denver, CO.

Hains, A.H., Fowler, S.A., & Chandler, L.K. (1988). Planning school transitions: Family and professional collaboration. Journal of the Division for Early Childhood, 12, 108-115.

Hunt, P., Goetz, L., & Anderson, J. (1986). The quality of IEP objectives associated with placement on integrated versus segregated school sites. Journal of the Association for Persons with Severe Handicaps, 11,(2), 125-130.

Kilgo, J.L., Richard, N., & Noonan, M.J. (1989). Teaming for the future: Integrating transition planning with early intervention services for young children with special needs and their families. Infants and Young Children, 2(2), 37-48.

Mahoney, G., O'Sullivan, P., & Dennebaum, J. (1990). A national study of mother's perceptions of family focused early intervention. Journal of Early Intervention, 14, 133-146.

Margolis, H., & Truesdell, L.A. (1987). Do special education teachers use IEPs to guide instruction? Urban Review, 19, 151-159.

McCollum, J.A., & Bailey, D.B. (1991). Developing comprehensive personnel systems: Issues and alternatives. Journal of Early Intervention, 15(1), 57-65.

McDonald, L., Kysela, G.M., Siebert, P., McDonald, S., & Chambers, J. (1989). Transition to preschool. Teaching Exceptional Children, Fall, 4-8.

McGonigel, M., Kaufmann, R., & Johnson, B. (eds.) (1991). Guidelines and Recommended Practices for the Individualized Family Service Plan. Bethesda, MD: Association for the Care of Children's Health.

Morgan, D.P., & Rhode, G. (1983). Teacher's attitudes toward IEP's: A two-year follow-up. Exceptional Children, 50, 64-67.

Nash, J.K. (1990). Public Law 99-457: Facilitating family participation on the multidisciplinary team. Journal of Early Intervention, 14:4, 318-326.

Noonan, M.J., & Ratokalau, N.B. (1991). PPT: The preschool preparation and transition project. Journal of Early Intervention, 15(4), 390-398.

Pugach, M.C., (1982). Regular classroom teacher involvement in the development and utilization of IEP's. Exceptional Children, 48, 371-374.

Public Law 94-142 Federal Register. (1975, November 29). Washington, DC: U.S. Government Printing Office.

Public Law 99-457 Federal Register. (1989, June 22). Washington, DC: U.S. Government Printing Office.

Rice, M.L., & O'Brien, M. (1990). Transitions: Times of change and accommodation. Topics in Early Childhood Special Education, 9(4), 1-14

Rosenkoetter, S.E. (1992). Guidelines from recent legislation to structure transition planning. Infants and Young Children, 5(1), 21-27.

Ryan, L.B., & Rucker, C.M. (1991). The development and validation of a measure of special education teachers' attitudes toward the individualized educational program. Educational and Psychological Measurement, 51, 877-882.

Turnbull, A., & Winton, P. (1984). Parent involvement policy and practice: Current research and implications for families of young, severely handicapped children. In. J. Blacher (Ed.), Severely handicapped young children and their families (pp. 377-397). Orlando, FL. Academic Press.

Wilson, C.H., & Thurman, S.K. (1990). The transition from early intervention to kindergarten: Parental satisfaction and involvement. Journal of Early Intervention, 14(1), 55-61.

Winton, P.J. (1990). A systematic approach for planning inservice training related to Public Law 99-457. Infants and Young Children, 3(1), 51-60.

Yoshida, R.K., Fenton, K.S., Maxwell, J.P., & Kaufman, M.J. (1978). Group decision making in the planning team process: Myth or reality? Journal of School Psychology, 16, 237-244.

Ysseldyke, J., Algozzine, B., & Allen, D. (1982a). Participation of regular education teachers in special education team decision making. Exceptional Children, 48, 365-366.

Ysseldyke, J.E., Algozzine, B., & Mitchell, J. (1982b). Special education team decision making: An analysis of current practice. Personnel and Guidance Journal, 60, 308-313.

Ysseldyke, J.E., Algozzine, B., & Allen, D. (1981). Participation of the regular education teachers in special education team decision making: A naturalistic investigation. Elementary School Journal, 82, 160-165.

Three Year Summary of Participants' Input and Oral Statement Content

Participant	Gross Motor	Fine Motor	Language	Sociali-zation	Self Care	Cognition	Transition	Acknowl-edgments	Other	Total	Percent
Teacher	*433	*1014	*440	1151	*510	*1044	*629	*362	1242	6825	37%
Parent	196	144	221	*461	*190	99	271	546	812	2940	16%
Occupational Therapist	611	1100	42	247	177	172	108	145	248	2850	15%
Physical Therapist	†227	†169	7	72	3	14	6	34	88	620	3%
Adapted PE	†58	2	0	18	0	0	4	0	†23	105	1%
Social Worker	6	3	5	†39	16	1	32	8	†150	260	1%
Speech-Lang Path.	21	64	900	184	24	111	98	74	†215	1691	9%
Program Administrator	112	177	105	123	70	141	†249	92	†432	1501	8%
Braille Specialist	62	†234	21	38	9	56	38	31	†140	629	3%
Other	19	39	45	86	11	61	496	67	†456	1280	7%
Total	1745	2946	1786	2419	1010	1699	1931	1359	3806	18701	100%
Percent of Total	9%	16%	10%	13%	5%	9%	10%	8%	20%	100%	

* denotes top contributors in the curricular area   † denotes top curricular areas addressed by participants   ○ denotes both top curricular and top contributors

Table 1. Summary of talk during 42 preschool IEP planning meetings.

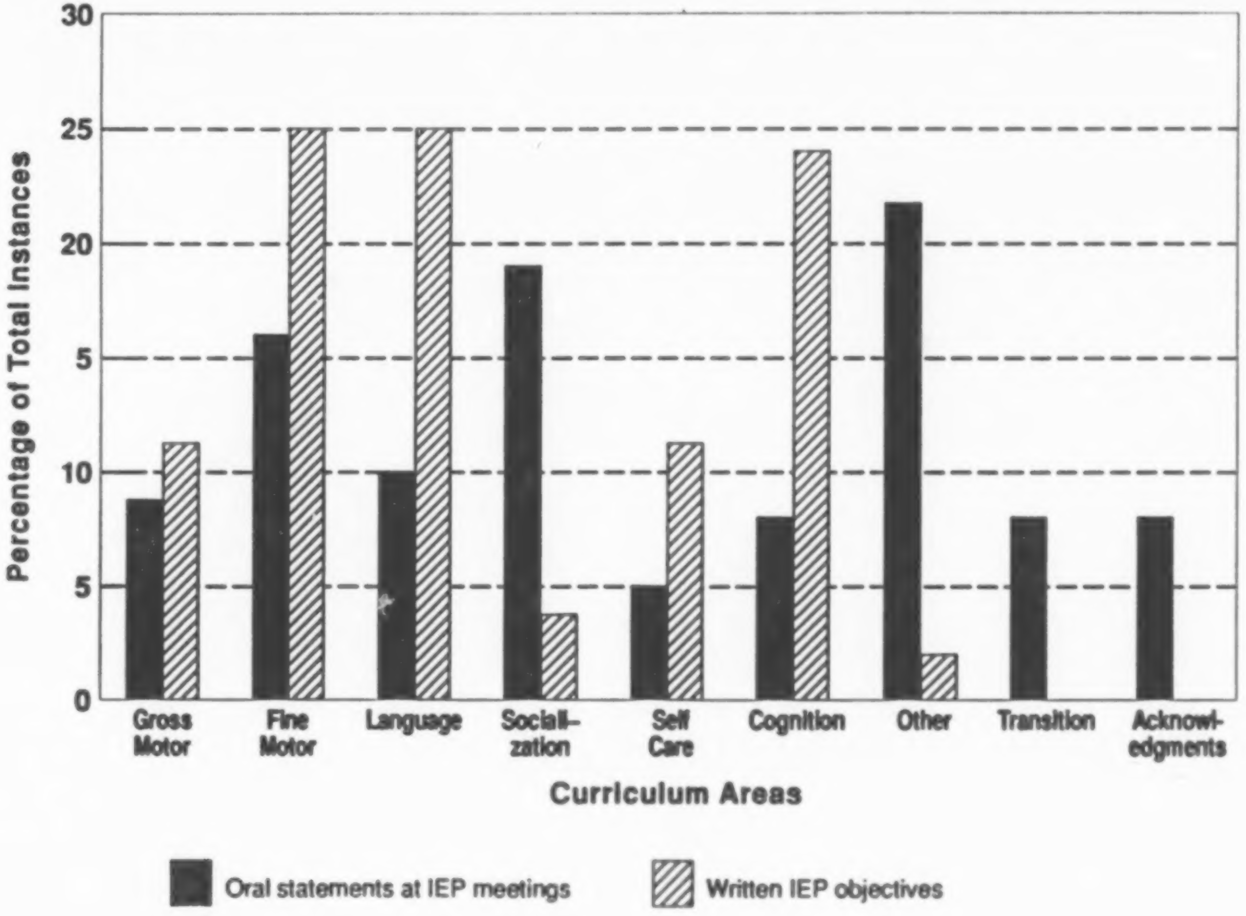


Figure 1. Comparison of oral and written actions during the IEP process.

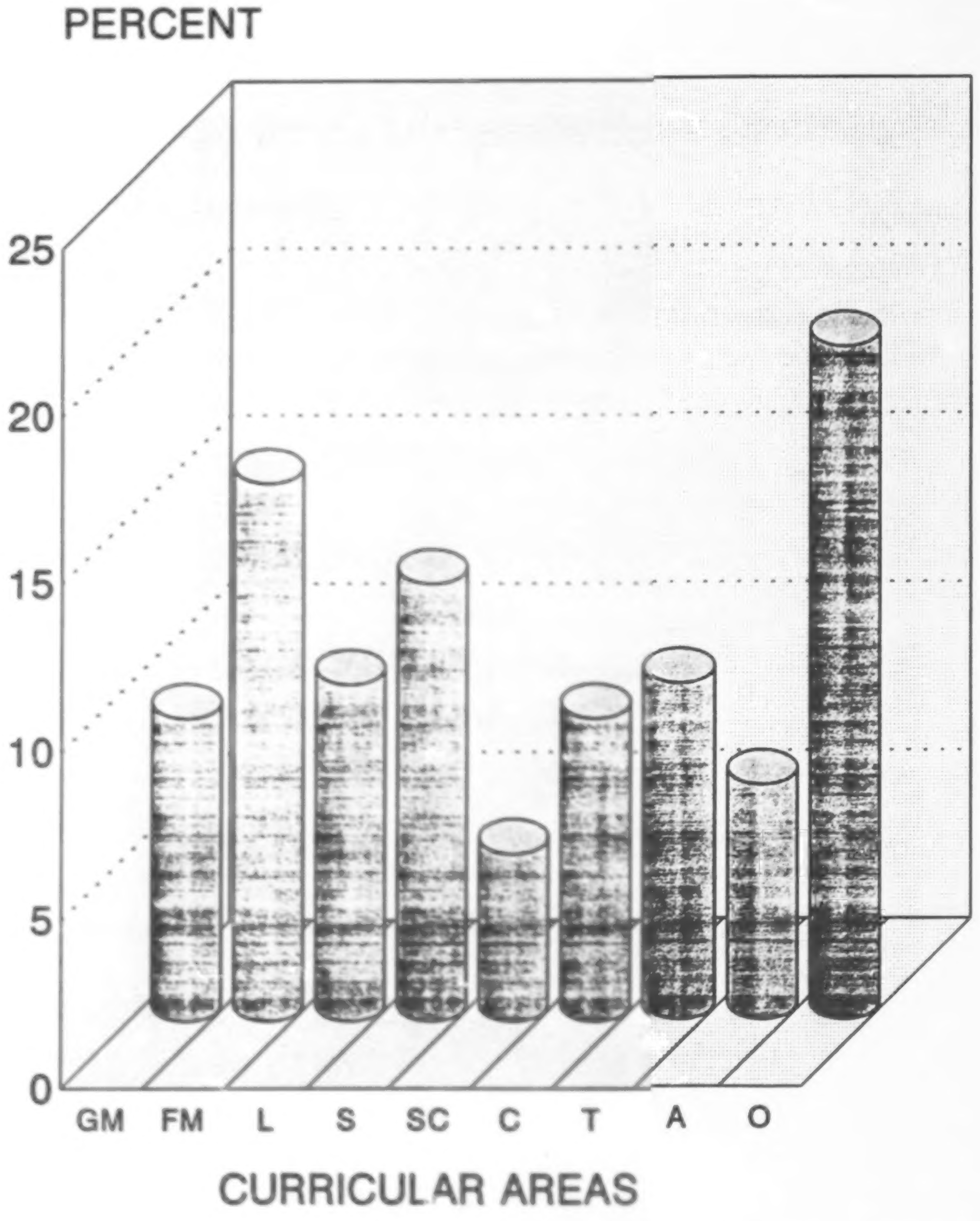


Figure 2. Stage of statements across curricular domains: Three year total.

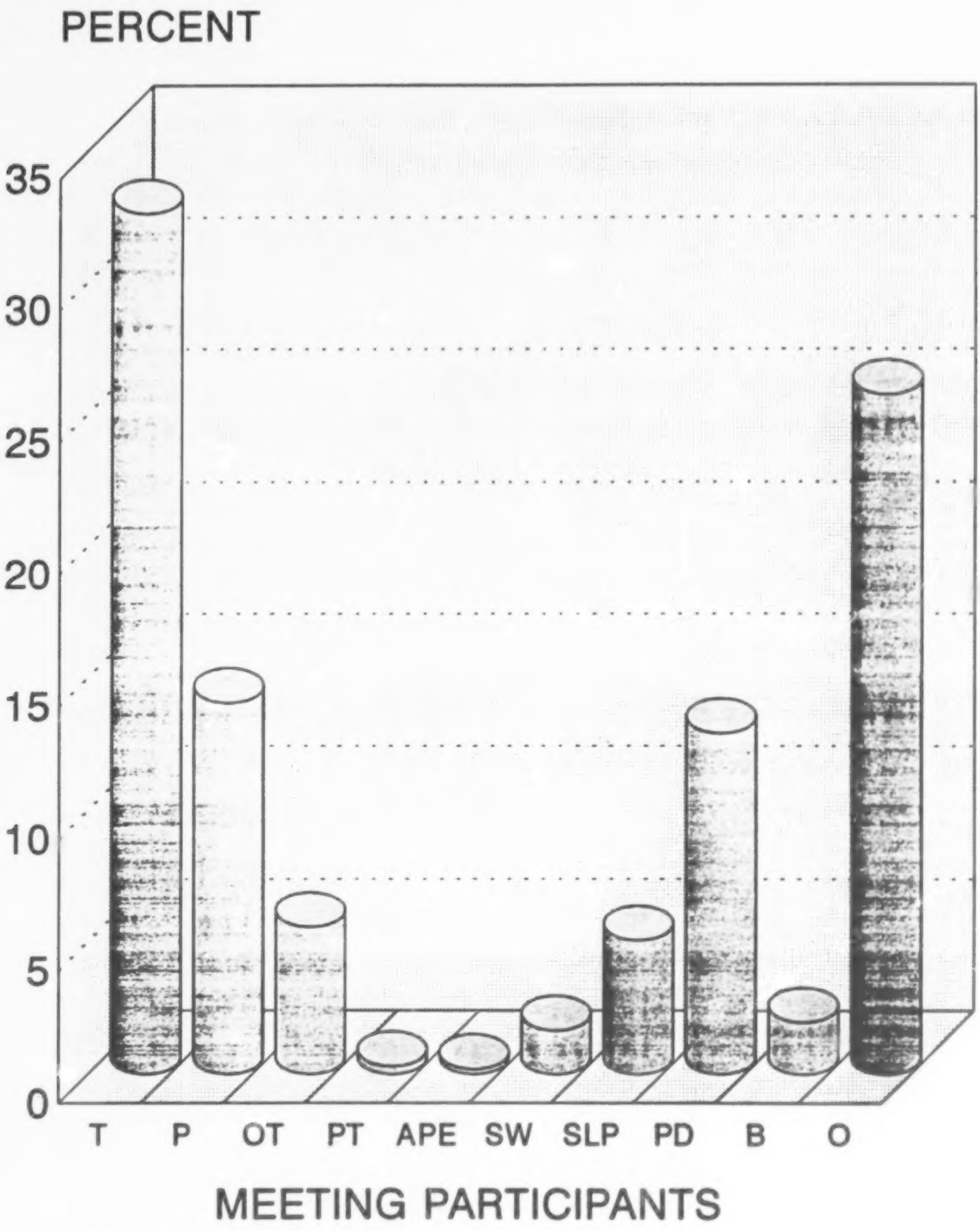


Figure 3. Percentage of transition statements by contributor: Three year total.

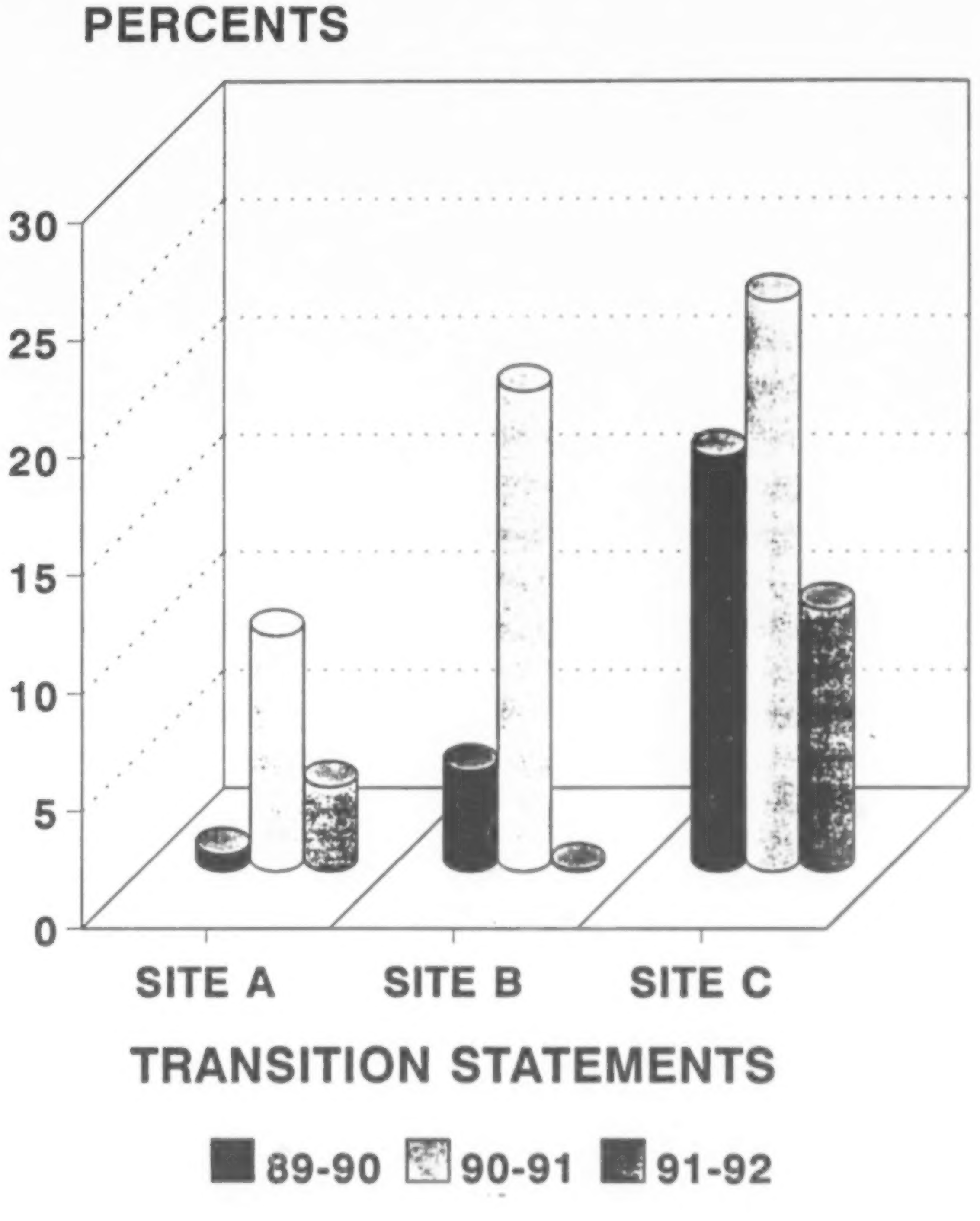


Figure 4. Percentage of transition statements: Three year site comparison.

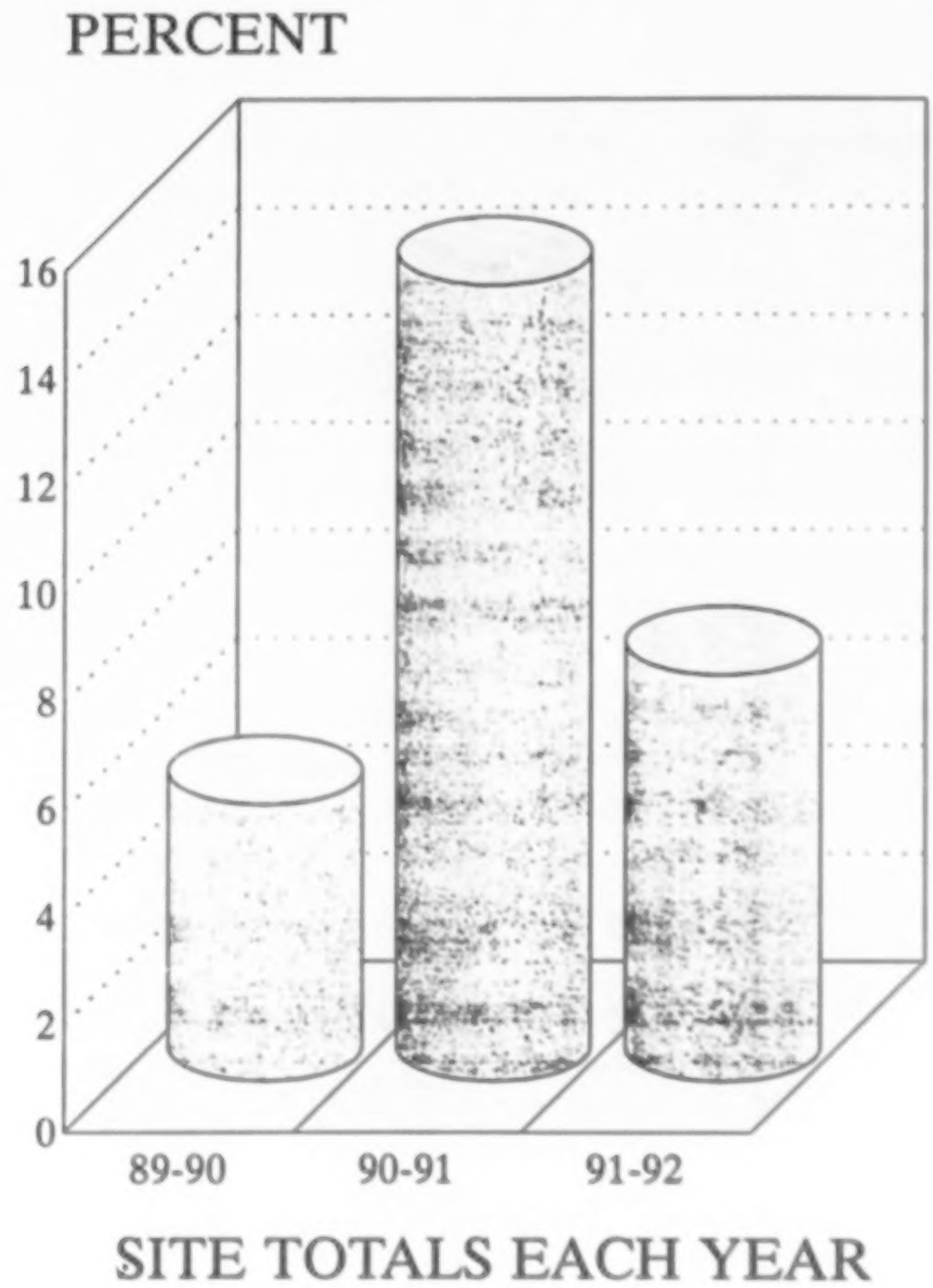


Figure 5. Transition statement summary: Three year comparison.

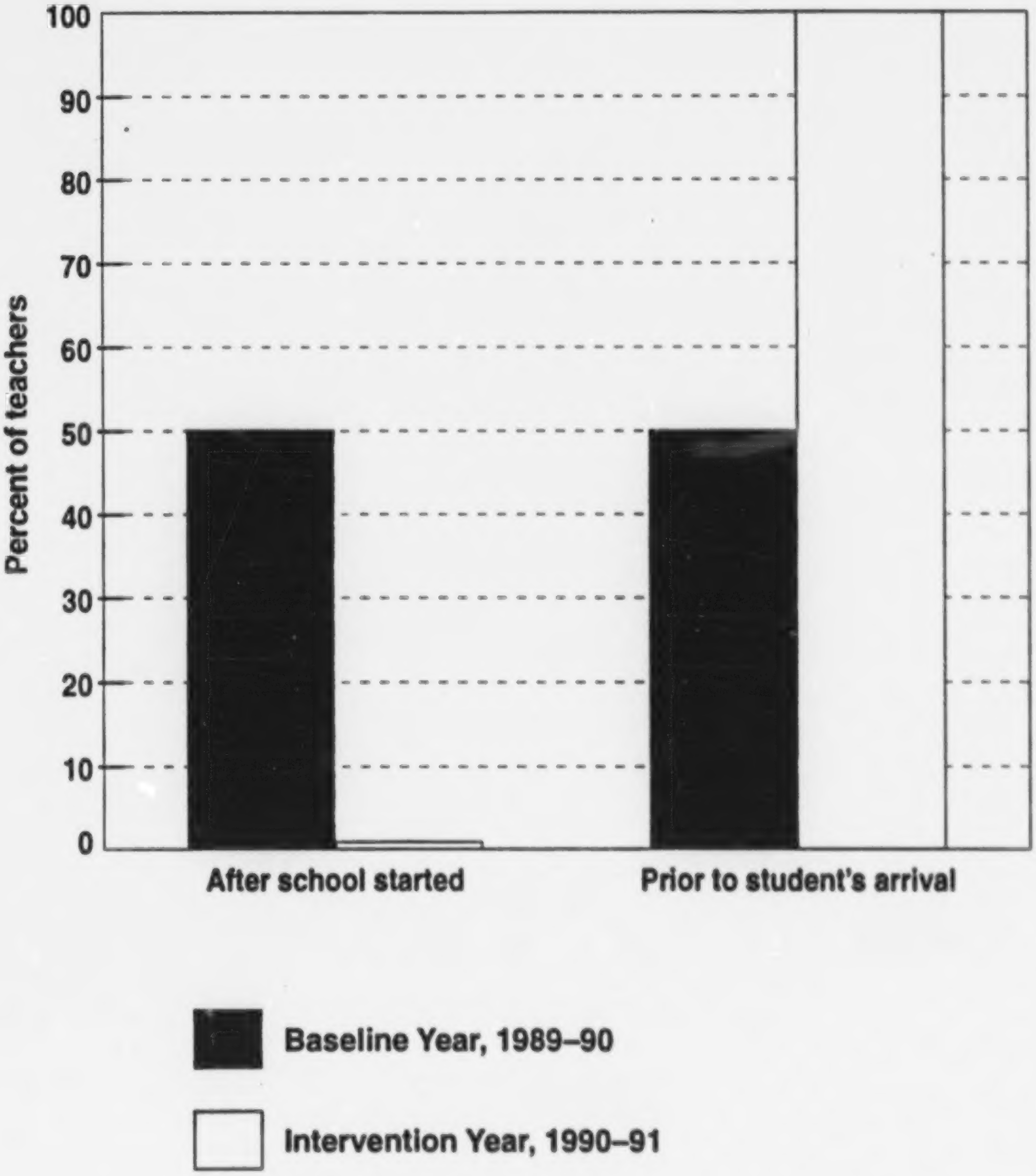


Figure 6. Percentage of teachers reporting when they found out about the child's placement

PROJECT 5.0

THE LONGITUDINAL STUDY OF FAMILIES AND CHILDREN IN TRANSITION (The FACT Study)

Marion O'Brien, Ph.D., Department of Human Development
Mabel L. Rice, Ph.D., Department of Speech-Language-Hearing
Judith E. Thiele, Ph.D., formerly with the Child Development Unit, KUMC

TARGETED TRANSITION PROBLEM

The overall goal of the study of Families and Children in Transition (FACT) is to follow individual children and their families as they move from service provider to service provider, in a documentation of the consequences of real-world transitions. The combined outcome measures of child progress and family functioning allow an identification of "best practices" in service delivery, continuity of services, and transition planning.

OBJECTIVES

5.1 To document the frequency and nature of transitions between service providers during the early childhood period;

5.2 To identify child and family characteristics that place particular children at risk for difficulties during transitions;

5.3 To identify aspects of transitions that lead to problems for families and disruption in services to children; and

5.4 To analyze the factors operating during transition that promote successful accommodation by children and families and ensure continuity of services.

BACKGROUND

The existing literature describing transitions of children with disabilities or developmental delays typically focuses on one particular transition, such as from the hospital to the home, or from preschool to kindergarten, for one particular group of children. In order to understand the mechanisms of transition, however, across the variety of possible disability categories, levels of development, and service needs, it is necessary to document a wider range of transition phenomena as they impinge on individual children and families over time. The FACT study is the first effort to follow a group of children at high risk for disability and developmental delay, as indicated by birth status, throughout their early childhood years, with a focus on service delivery. In this study, extensive descriptive information about families, children's health records, and use of services has been collected so that the factors that influence service provision and access to services, transitions between service providers, and the perceptions of families about the services received can be described.

METHODS

SUBJECTS

Participants in the study were recruited from the Neonatal Intensive Care Unit (NICU) of a midwestern teaching hospital over a 15-month period (May 1989 through August 1990). Of the 350 NICU admissions during this time, 164 were excluded from participation for the following reasons: infant death (37), multiple births (26), transfer to another hospital outside of the area (28), NICU stay of less than 24 hours (33), inability to contact parent (32), and non-English speaking parents (8). No exclusions were made based on medical diagnosis in order to include in the study the full range of infants that constitute NICU populations. Of the 186 mothers who were contacted about participation in the study, 63 refused because they were too busy, unwilling to discuss their private lives, or felt the study would not benefit them directly. Thus, a total of 123 families agreed to participation. Twenty of these families could not be located in the two months after hospital discharge and so were never interviewed. The final sample therefore consisted of 103 infants and families.

For purposes of analysis, infants were characterized as high, moderate, or low risk based on perinatal medical histories. High risk infants (N = 36) included those who were identified as having a condition that is known or highly likely to result in disability or developmental delay (including syndromic conditions, congenital deformities, meningitis, tracheotomies, bronchopulmonary dysplasia, or sensory impairments). The moderate risk category (N = 30) included all infants born at less than 1500 g (who were not included in the high risk group), who were small for gestational age or reported to have suffered intrauterine growth retardation, or whose neonatal histories included intraventricular hemorrhage, hyaline membrane disease, or another serious illness. Infants were categorized as low risk (N = 37) if they had no severe illnesses or conditions other than prematurity, respiratory distress syndrome, resolved sepsis, and/or a minor heart problem. Descriptive data on these three groups of infants are reported in Table 1.

In this report, data collected over the children's first 36 months are included. Complete data are available on 87 infants (31 in the high risk group, 26 moderate risk, and 30 low risk). Completion statistics by group appear in Table 2. Of the 16 families who did not complete the study, 8 children died, 1 was judged to be living in a situation too dangerous for the home visitor, and the remaining 7 were unable to be contacted or unwilling to be scheduled for visits. Seven infants in the high risk group were so severely impaired that they were unable to participate in the developmental assessments and so they were dropped from the analyses that included measures of developmental outcome; however, the data from these families are included in the group comparisons of interview and questionnaire data.

PROCEDURE

Families were visited in their homes five times over the children's first three years. The initial round of data collection to obtain family demographic information occurred in the first few months after the infant's discharge from the NICU (mean chronological age = 2.9 mos., S.D. = 2.2; mean corrected age = 2.1 mos., S.D. 2.2). During four subsequent visits, developmental status information was also obtained through standardized tests: at Time 1 the infants were approximately 10 months of age (mean corrected age = 10.1 mos., S.D. = 1.2; mean chronological age = 10.9 mos., S.D. = 1.6); at Time 2 the infants were approximately 18 months of age (mean chronological age = 18.2 mos., S.D. = 3.0); at Time 3, 27 months (mean chronological age = 27.4 mos., S.D. = 0.5); and at Time 4, 36 months (mean chronological age = 36.5 mos., S.D. = 1.3).

MEASURES

Table 3 lists the measures administered at each of the five home visits.

Parent interview. Demographic, employment, household, and health history information was collected by parent report, using interview forms developed for this study.

Services received. During each family visit, the interviewer also obtained information regarding the number and type of educational, medical, and therapeutic (occupational therapy, physical therapy, and speech-language therapy) services provided for the child in the time since the previous interview. Whenever a change in services or service providers occurred, the parent's report of the reasons for the change and the impact of the change on the family and child was obtained.

Other family information. During each of the home visits, parents filled out the Carolina Parent Support Scale (Bristol, 1978), a 12-item self-report measure of social support. Respondents are asked to indicate the extent to which certain people or services are helpful to them on a 5-point scale ranging from "not at all helpful" to "extremely helpful". Sources of support included on the measure are spouse and extended family, friends, other parents with special needs children, physician, and other professionals. In previous research, the availability of adequate social support has been found to have a positive influence on the outcomes of children born prematurely and at full term (Crnic et al., 1983, 1984), presumably by affecting parents' ability to cope with child-rearing stresses.

The Parenting Daily Hassles scale (Crnic & Greenberg, 1990) was used at Time 4 and Time 5 to evaluate parents' perceptions of the difficulties of child-rearing. This measure lists 20 situations that commonly occur in households with young children and respondents are asked to indicate both the frequency (rarely, sometimes, a lot, constantly) with which each situation occurs in their family and how much of a "hassle" it is for them (using a 5-point scale on which 1 = no hassle and 5 = big hassle). A total intensity score, which represents the sum of the hassle ratings for all items, is then calculated as an index of parental stress related to daily child rearing situations. With a sample of 5-year-olds, Crnic and Greenberg (1990) reported an alpha of .90 for the total intensity scale; for the present sample, the alpha at Time 4 was .88 (n = 63) and at Time 5 .87 (n = 61).

Child developmental status. At Time 1 (10 months corrected age) and Time 2 (18 months chronological age), children's overall developmental status was assessed using the Bayley Scales of Infant Development (Bayley, 1969). Both the mental and the motor scales were administered. The Bayley Scales was selected for use during infancy because it is the best standardized measure available of overall developmental status for children up to 24 months. At Time 3 (27 months chronological age) and Time 4 (36 months chronological age) the Battelle Developmental Inventory Screening Test (Newborg, Stock, Wnek, Guidubaldi, & Svinicki, 1984) was used to evaluate overall developmental status. The Battelle was selected for use because the 1969 version of the Bayley Scales does not have a wide enough range to capture developmental status for children over 24 months of age. The Battelle has been widely adopted as a screening instrument to detect potential developmental delay in preschool-age children, and the Screening Test total score is reported to correlate at .99 with the total score on the full Battelle battery. In addition, the Battelle is relatively quick to administer, which was important in order to keep the length of the home visits reasonable for parents, and includes adaptations for children with sensory and motor impairments. Because the Battelle Screening Test does not provide a standard score, a scoring system was developed based on data from the norm tables provided in the manual (Newborg et al., 1988).

At Time 5, the Peabody Picture Vocabulary Test - Revised (PPVT-R, Form M, Dunn & Dunn, 1981) was also administered to the children. The PPVT-R is a well standardized and relatively quick to administer assessment of receptive vocabulary that correlates highly with full-scale measures of intelligence in the preschool years.

Child behavior problems. The Achenbach Child Behavior Checklist (CBCL) for ages 2-3 (Achenbach, 1992) was used at Times 3 and 4 (27 and 36 months) to obtain parents' perceptions of their children's social-emotional functioning. The CBCL consists of a list of 99 behavioral/emotional problem items on each of which respondents indicate whether the description is very true or often true (score of 2), somewhat or sometimes true (score of 1), or not true (score of 0) of the child. For this study, total scores on the CBCL were used as indicators of the children's social-behavioral functioning. A score of 63 is considered an indicator of potential behavior problems (Achenbach, 1992).

ANALYSES

Initially analyses of variance were carried out to examine differences by infant risk group in demographic, household, and health history variables, and in parent report measures of social support and daily hassles.

The analyses of primary interest in the study are the developmental profiles of children in the three risk groups. Multivariate repeated measures analyses of variance were used to test for differences over time within and between the groups. Additional 2-way analyses were carried out to evaluate the contribution of selected family demographic factors to children's developmental outcomes. Health outcomes for children were also analyzed using ANOVAs to compare number of hospitalizations and physician visits for illness across the three risk groups.

Correlational analyses were used to examine the extent to which social support and parents' perception of child-rearing difficulties were related to developmental outcomes at each measurement point. A final set of descriptive analyses examined the role of special services in ameliorating negative developmental outcomes for children at medical risk.

OUTCOMES

Group Differences in Family Measures

Family demographics for the three risk groups of children are shown in Table 4. The groups were similar on all variables.

Parental perceptions of social support were highly consistent across data collection points (the median Pearson correlation calculated across time points was .57); thus, a mean social support index was calculated for each family across all rounds. The mean level of social support reported by families of high risk infants was 17.5 (S.D. = 6.4); of moderate risk infants, 17.8 (S.D. = 5.7); and of low risk infants, 18.5 (S.D. = 5.1); F (2,96) < 1, ns. The intensity of daily hassles reported by parents at Time 3 and Time 4 were also quite consistent, r (50) = .48, and therefore a mean score was calculated and analyzed by risk group. The mean for the high risk group was 42.2 (S.D. = 12.4), for the moderate risk group 39.6 (S.D. = 8.3), and for the low risk group 43.9 (S.D. = 12.7), F (2,79) < 1, ns.

Group Differences in Child History Variables

Table 5 shows child health variables across 36 months for children in the three risk groups, in terms of percentages of children requiring more than routine medical care and mean number of times children were treated. Analyses of variance (with post-hoc Scheffé tests) indicated group differences in mean number of doctor visits for illness, F (2,84) = 4.18, p < .05, high- and low-risk groups different; in number of hospitalizations, F (2,84) = 13.02, p < .001, high-risk group different from both moderate- and low-risk groups; and in number of surgeries, F (2,84) = 5.65, p < .01, with the high-risk group again higher than either of the other two groups.

As a group, these NICU graduates experienced considerable family instability. In their first three years, the children moved an average of 3 times, with some families changing residences as many as 15 times. Only 37 of the children (36% of the sample) remained at the same address for 36 months.

In addition, five of the children (3 from the High Risk group and 1 each from the Moderate and Low Risk groups) were placed in foster care within the 3-year period of the study, and another 18 of the children (7 from the High Risk group, 2 from the Moderate Risk group, and 9 from the Low Risk group) were not in their biological mother's custody for at least a portion of the time. These children were cared for by their grandmothers, or were in their father's or step-father's custody following parental separation or divorce.

Group Differences in Child Developmental Status

The patterns of scores representing overall developmental status (Bayley MDI and standardized Battelle total score) from Time 1 to Time 4 are shown in Figure 1, and complete developmental and behavioral assessment data are included in Table 6. A repeated measures MANOVA by group on overall developmental status indicated a dramatic decline in developmental trajectory from infancy to age 3, F 3,201) = 39.06, p < .001, as well as a time X risk group interaction, F (6,201) = 2.97, p<.01. Follow-up comparisons (one-way ANOVAs and Scheffé comparisons, p<.05) showed significant differences between high- and low-risk groups at Time 1 only. Thus, differences in developmental status between groups defined by neonatal medical risk were minimal by 18 months of age. At 27 months, all groups of NICU graduates, even those considered to be at low risk, were performing below expected levels on standard developmental measures, and at 36 months the group means were at approximately one S.D. below the norm. Only 20 of the 36-month sample of 87 children scored at 85 or above on the Battelle.

Children's scores on the PPVT-R at Time 4 and the Child Behavior Checklist (CBCL) at Times 3 and 4 were also analyzed by risk group, and no differences were found (see Table 6). The PPVT-R scores, as a whole, were low, confirming the decline in developmental performance shown by the more global Battelle assessment (Figure 1). The CBCL scores were within typical ranges, with only 2 children at Time 3 and 1 child at Time 4 falling above the clinical cutoff score of 63.

Interaction of Family Demographics and Child Risk Status

Two-way MANOVAS were used to examine whether family demographic factors had independent effects on developmental status across measurement points, and also to identify potential interactions between family demographics and child health risk as determinants of outcome for NICU graduates. Demographic variables selected for analysis were those with the greatest theoretical importance: maternal education level, marital status of mother, and presence or absence of poverty.

The results of the MANOVAs indicated that neither maternal education nor parental marital status was significantly related to children's outcomes. A marginally significant main effect was found for poverty, F (1,64) = 3.61, p=.062, but the poverty X risk group interaction was not significant. Thus, in general, family demographics were not strongly associated with children's performance on developmental tests.

Family and Child Measures in Relation to Developmental Status

Pearson correlation coefficients between social support and intensity of daily hassles scores and with each developmental assessment measure are shown in Table 7. Correlations were similar within each risk group and so results for the entire sample are shown. Social support was not related to any of the other measures. The mean intensity of daily hassles reported by parents when their children were 27 and 36 months of age was correlated with their reports of child behavior problems but not with developmental test results. All the developmental status measures across rounds were significantly correlated with one another.

Pearson correlation coefficients were also calculated between child health variables (number of doctor visits for illness and number of hospitalizations across 36 months) and developmental test scores at 36 months to determine whether repeated or chronic illness was associated with outcome. Neither health variable was significantly correlated with test scores.

Special Services and Developmental Outcome

The declines in developmental trajectories that characterize these NICU graduates suggest that many of the children participating in this study should have been candidates for early intervention services. Analyses were therefore carried out to determine how many of the children actually received special educational or therapeutic services, and how many participated in the hospital's NICU follow-up clinic. The numbers, by group, receiving such services at each time point are shown in Table 8. Given the low developmental scores for these children, the number receiving special services is remarkably low. Because such a few children received special services, statistical comparisons of the developmental outcomes at 36 months of those children receiving special services with those not receiving such services could not be carried out.

All the children who were receiving classroom- or home-based general early intervention services and the majority of those who received specialized services (occupational therapy, physical therapy, oral-motor therapy, etc.) had received a specific medical diagnosis. Some parents whose children were referred to such services discontinued them after several months, either because of difficulties with transportation and scheduling or because they felt the services were not helpful. In several cases, parents reported that the services provided were so limited that their child was not receiving enough benefit to warrant the problems caused to the family by getting the child to the service setting.

Thus, the overall service delivery picture that emerges from this sample of at-risk children is one of missed opportunities and minimal intervention. It took a medical diagnosis to ensure service provision, and then the services were often available for only short periods of time once a week or every other week. For the majority of the sample, for whom we recorded developmental test scores showing significant delays in one or more areas, no professional had carried out an evaluation or recommended services to prevent more extensive delay.

IMPACT

The FACT study provides important information regarding the probable developmental outcomes of children whose birth status places them at risk for delay or disability. In addition, the service records collected for the families participating in the study indicate that the service delivery system for infants and toddlers has extensive gaps. Clearly, not all families have access to or information about services. Most of the children in our sample, despite being NICU graduates and thus clearly at risk, never had their developmental status fully evaluated.

Because of the longitudinal nature of the study, reports on these findings are currently in progress and will be submitted to relevant journals reaching target audiences in the medical community and service providers in early intervention. Data on the children at age 4 is also being collected during this year so that a more comprehensive picture of the outcomes for this group of children can be obtained.

RECOMMENDATIONS

Because the FACT study was begun before Part H of P.L. 99-457 was being fully implemented in the State of Kansas, the results reported here present a view of early intervention services prior to the current emphasis on infant-toddler services. Optimistically, we might predict that in the four to five years since the FACT study was initiated, more comprehensive follow-up and evaluation procedures have been put in place, and early intervention services have expanded to meet the obvious need. In reality, however, little has changed in the geographic area in which this study was conducted.

Despite the recognition in Part H that early intervention services should be available in all settings serving children and families, the NICU still focuses narrowly on the medical treatment of infants. Follow-up of NICU graduates is limited to the first year or 18 months, a period of time that is not sufficient, according to our data, to obtain an accurate picture of a child's developmental trajectory. Unless there is a clear medical need, children and families are left to negotiate for educational and therapeutic services on their own.

In addition, the emphasis within Part H has been largely on coordination of existing services and elimination of duplication of services, rather than the addition of new or expanded services. As indicated by the experiences of the families in the FACT study, this emphasis needs to be expanded to include adding new and better services in areas where early intervention services are limited or nonexistent. Services also need to consider the individual needs of each family, as for many of the families who participated in the FACT study, arranging to get a child to a service setting on an irregular basis at inconvenient hours set by the agency frequently led to discontinuing services.

A comparison study in which a group of diverse NICU graduates, similar to the sample used in the present study, was followed from birth and provided with a Family Services Coordinator who met regularly with the family, provided support and information, and helped arrange for a full range of early intervention services for children, would provide a useful contrast to the current data. We would predict that children who received preventive early intervention services throughout their first three years would not show the same kinds of developmental declines that were typical of the present sample. In addition, we would predict that specific diagnoses, which in many cases are not made in the present sample until the children are 3 or 4 years old, would be made earlier, and specialized medical and therapeutic services could then prevent anticipated deficits in performance. Unfortunately, these comparisons cannot be made from the data collected in the present study because so few children received early intervention or special therapeutic services in the infant, toddler, or preschool years.

The results of the FACT study also support continued investment in Child Find and tracking systems to identify children and families at risk for developmental delays and disabilities as early as possible. The expansion of home visiting and classroom-based programs for general educational stimulation and early intervention is also a clear need. Furthermore, placement of such intervention programs within regular child-care settings, where children can receive full-day care while their parents work or prepare for employment, should be a high priority.

Although services for children with special needs are now mandated in all states beginning at age 3, many children and families will not be aware that they qualify for such services. Thus, substantial numbers of children will continue to be identified with developmental delays in kindergarten or the early school years, and many of these delays will have been preventable. This situation could be ameliorated by including NICU admission as an eligibility factor for infant-toddler services, a criterion that could readily be supported by the present data. If all children who were admitted to the NICU were automatically included under Part H, so that an IFSP was developed and implemented for them during the early months of life, many more families of children who could benefit from preventive intervention services would be encouraged to access such services.

Given the extensive analyses that indicate an economic advantage to preventive intervention as opposed to special education services begun at school age, and the human cost of the developmental declines shown by the FACT study data, efforts to make early intervention available to all children who can be identified to be at risk are warranted. What is needed are clear data showing the efficacy of preventive intervention practices across a range of potentially disabling conditions and family situations. Such evidence will be crucial if national, state, and local resources are to be redirected toward prevention rather than treatment.

REFERENCES

Achenbach, T. M. (1992). Child Behavior Checklist and 1992 Profile for Ages 2-3. Burlington, VT: University Associates in Psychiatry.

Bayley, N. (1969). Bayley Scales of Infant Development. New York: Psychological Corporation, Harcourt Brace Jovanovich, Inc.

Bristol, M.M., Carolina Parent Support Scale - Short Form (Two-Parent Family Version) (Revised 1983). The Frank Porter Graham Child Development Center, University of North Carolina, Chapel Hill, NC.

Crnic, K.A., & Greenberg, M.T. (1990). Minor parenting stresses with young children. Child Development, 61, 1628-1637.

Crnic, K.A., Greenberg, M.T., Ragozin, A.S., Robinson, N.M., & Basham, R.B. (1983). Effects of stress and social support on mothers and premature and full-term infants. Child Development, 54, 209-217.

Crnic, K.A., Greenberg, M.T., Robinson, N.M., & Ragozin, A.S. (1984). Maternal stress and social support: Effects on the mother-infant relationship from birth to eighteen months. American Journal of Orthopsychiatry, 54(2), 224-235.

Dunn, L., & Dunn, L. (1981). Peabody Picture Vocabulary Test - Revised (PPVT-R). Circle Pines, MN: American Guidance Service.

Newborg, J. (1988). Battelle Manual. Allen, TX: DLM Teaching Resources.

Newborg, J., Stock, J.R., Wnek, L., & Guidubaldi, J. (revised 1989). Battelle Developmental Inventory. Allen, TX: DLM Teaching Resources.

Table 1

Descriptive Data on Participating Infants

	Risk Group					
	High (*n*=36)	Moderate (*n*=30)	Low (*n*=37)	*F*	*df*	*p*
Birthweight				7.3	(2,100)	<.01
% < 1500g	33.3	50.0	0			
% 1500-2500g	33.3	26.7	59.5			
% > 2500g	33.3	23.3	40.5			
Mean EGA in weeks, (*SD*)	32.8 (5.5)	32.9 (4.8)	34.8 (3.7)	2.1	(2,99)	ns
Mean days in NICU (*SD*)	58.9 (48.0)	40.7 (28.8)	23.6 (18.0)	9.7	(2,100)	<.001
% Male	50.0	56.7	51.4	<1	(2,100)	ns
% Ethnic minorities	30.6	23.3	37.8	<1	(2,100)	ns

Note. Scheffé post-hoc tests: Birthweight, Groups 2 & 3 different; Days in NICU, Groups 1 & 3 different.

Table 2

Number of Families Completing Each Data Collection Point by Risk Group

	Initial Interview	10 mos. Time 1	18 mos. Time 2	27 mos. Time 3	36 mos. Time 4
High risk	36	35	35	34	31
Moderate risk	30	27	27	27	26
Low risk	37	32	31	31	30

Table 3

Plan of Research

Initial interview:	Parent interview Carolina Parent Support Scale
Times 1 and 2:	Parent interview Carolina Parent Support Scale Bayley Scales of Infant Development
Time 3:	Parent interview Carolina Parent Support Scale Parenting Daily Hassles Scale Battelle Developmental Inventory Screening Test Child Behavior Checklist
Time 4:	Parent interview Carolina Parent Support Scale Parenting Daily Hassles Scale Battelle Developmental Inventory Screening Test PPVT-R Child Behavior Checklist

Table 4

Family Demographics at initial interview, by Risk Group

	Risk Group			
	High (*n*=36)	Moderate (*n*=30)	Low (*n*=37)	*F* (2,100)
Mother's age (*SD*)	29.6 (6.2)	28.6 (6.0)	30.2 (6.2)	<1 ns
Mother's education				<1 ns
% Less than 12 yrs.	19.4	23.3	21.6	
% High school grad	38.9	36.7	35.1	
% Some college	27.8	36.7	29.7	
% College grad	13.9	3.3	13.5	
% Married	61.1	50.0	56.8	<1 ns
% Receiving welfare assistance	44.4	40.0	51.4	<1 ns
% Mothers employed	40.0	27.5	40.5	1.6 ns
% Service or labor	(35.7)	(37.5)	(20.0)	
% Clerical or sales	(21.4)	(62.5)	(46.7)	
% Professional	(42.8)	(0)	(33.3)	

Table 5

Child Health Variables by Risk Group

% of Children	Initial Interview	Time 1	Time 2	Time 3	Time 4	Mean total number 0-36 mo.
High risk (n)	(36)	(35)	(35)	(34)	(31)	(31)
Doctor visits for illness	58%	86%	86%	85%	77%	19.8
Hospitalizations	25%	49%	31%	38%	32%	2.8
Surgeries	3%	26%	9%	6%	6%	0.7
Moderate risk (n)	(30)	(27)	(27)	(27)	(26)	(26)
Doctor visits for illness	20%	85%	63%	67%	58	11.5
Hospitalizations	13%	11%	15%	15%	8%	0.7
Surgeries	3%	0	0	0	0	0.04
Low risk (n)	(37)	(32)	(31)	(31)	(30)	(30)
Doctor visits for illness	16%	78%	77%	65%	63%	9.0
Hospitalizations	5%	13%	3%	6%	7%	0.4
Surgeries	3%	6%	3%	3%	0	0.2

Table 6

Mean Developmental Status Scores By Risk Group (Standard Deviations in Parentheses)

		Risk Group					
	High	Moderate	Low	*F*	*df*	*p*	
Time 1							
Bayley MDI	85.0 (25.6)	91.1 (21.7)	103.9 (19.2)	5.27	2,78	< .01	1 & 3 diff
Bayley PDI	75.2 (24.2)	87.7 (23.0)	91.7 (17.6)	4.19	2,77	< .05	1 & 3 diff
Time 2							
Bayley MDI	86.4 (19.9)	99.0 (20.6)	96.3 (16.7)	3.00	2,77	= .056	
Bayley PDI	91.5 (20.0)	110.1 (18.7)	107.2 (19.5)	6.51	2,76	< .01	
Time 3							
Battelle	68.9 (18.5)	69.7 (21.8)	72.6 (14.5)	< 1	2,78	ns	
CBCL	29.0 (15.1)	23.1 (9.3)	28.1 (17.1)	< 1	2,89	ns	
Time 4							
Battelle	84.4 (21.5)	80.2 (13.2	82.0 (12.0)	< 1	2,74	ns	
PPVT-R	84.6 (14.6	88.4 (13.7)	86.0 (12.3)	< 1	2,78	ns	
CBCL	23.8 (10.8)	25.6 (11.3)	23.8 (11.1)	< 1	2,83	ns	
Overall *F*	Risk x Time *F*(6,201) = 2.97 *p* < .01 Risk *F*(2,67) = 1.23 ns Time *F*(3,201) = 39.6 *p* < .001						

Table 7

Pearson Correlation Coefficients Between Family Measures and Developmental Status

	1	2	3	4	5	6	7	8	9	10	11
1. Social support	--	.04	-.04	.15	-.10	.04	.02	-.02	-.04	.10	.13
2. Daily hassles		--	.08	.06	.02	-.10	-.08	$.30^{*}$	-.02	-.09	$.32^{**}$
3. T_1 MDI			--	$.75^{**}$	$.63^{**}$	$.54^{**}$	$.40^{**}$	.21	.21	.06	.06
4. T_1, PDI				--	$.58^{**}$	$.59^{**}$	$.51^{**}$	.14	$.28^{*}$	.20	.03
5. T_2 MDI					--	$.70^{**}$	$.48^{**}$	.09	$.37^{**}$	.22	.07
6. T_2 PDI						--	$.34^{**}$	-.01	$.26^{*}$	.13	-.08
7. T_3 Battelle							--	.03	$.50^{**}$	$.37^{**}$	.02
8. T_3 CBCL								--	.13	.13	$.38^{**}$
9. T_4 Battelle									--	$.41^{**}$	.04
10. T_4 PPVT-R										--	-.07
11. T_4 CBCL											--

$^{*}p < .05$. $^{**}p < .01$.

Table 8

Numbers of Children Participating in Educational and Therapeutic Services by Risk Group

	Risk Group		
	High	Moderate	Low
Time 1			
Sample size	35	27	32
Educational service	1	0	2
Therapy service	6	3	0
NICU clinic	15	6	4
Received no service	15	20	26
Time 2			
Sample size	35	27	31
Educational service	2	0	0
Therapy service	7	0	0
NICU clinic	5	1	1
Received no service	21	26	31
Time 3			
Sample size	34	27	31
Educational service	3	1	0
Therapy service	10	1	0
NICU clinic	2	0	2
Received no service	23	25	29
Time 4			
Sample size	31	26	30
Educational service	6	4	2
Therapy service	6	0	0
NICU clinic	1	0	0
Received no service	22	22	28
Total 0-36 mo.			
Sample size	31	26	30
Educational service	7	4	4
Therapy service	13	4	0
NICU clinic	15	6	4
Received no service	8	15	22

PAPERS, CHAPTERS, AND BOOKS PUBLISHED OR ACCEPTED FOR PUBLICATION

Atwater, J.B., Carta, J.J., Schwartz, I.S., & McConnell, S.R. (in press). Blending developmentally appropriate practice and early childhood special education. Redefining best practice to meet the needs of all children. In B.L. Mallory & R.F. New (Eds.), Diversity in early childhood education: A call for more inclusive theory, practice, and policy. Teachers College Press.

Aylward, E., Brown, F., Dunn, W., Elksnin, L., & Elksnin, N. (1992). Planning for treatment of learning disabilities. In F.R. Brown & E.H. Aylward (Eds.), Diagnosis and management of learning disabilities (pp. 147-168). Boston, MA: College Hill Press.

Baer, D.M., & Schwartz, I.S. (in press). If reliance on epidemiology were to become epidemic, we would need to assess its social validity. Journal of Applied Behavior Analysis.

Boyle, M.A., Dunn, W., & Kielhofner, G. (1990). Professional occupational therapy education program outside funding for 1985-87. Occupational Therapy Journal of Research, 10(6), 334-342.

Bulgren, J.A., & Carta, J.J. (1992). Examining the instructional contexts of students with learning disabilities. Exceptional Children, 59, 182-191.

Bulgren, J.A., & Carta, J.J. (in press). Ecobehavioral assessment of the student with learning disabilities in regular and special classrooms. Exceptional Children.

Bunce, B.H. (1989). Training referential communication skills: Some guidelines. KSHA Journal, 29(2), 7-11.

Bunce, B.H. (1989). Using a barrier game format to train children's referential communication skills. Journal of Speech and Hearing Disorders, 54, 33-43.

Bunce, B.H. (1990). Bilingual/bicultural children and education. In L. McCormick & R. L. Schiefelbusch (Eds.), Early Language Intervention (2nd ed., pp. 474-506). Columbus: Charles E. Merrill.

Bunce, B.H. (1991). Referential communication skills: Guidelines for therapy. Language, Speech and Hearing in the Schools, 22, 296-301.

Bunce, B.H. (1993). Language of the classroom. In A. Gerber (Ed.), Language Related Learning Disabilities (pp. 135-159). Baltimore: Paul H. Brookes Publishing Co.

Caldera, Y.M., Huston, A.C., & O'Brien, M. (1989). Social interactions and play patterns of parents and toddlers with feminine, masculine, and neutral toys. Child Development, 60, 70-76.

Carta, J.J. (1991). Education of young children in inner-city classrooms. American Behavior Scientist, 34(4), 440-453.

Carta, J.J. (1992). Education of young children in inner-city classrooms. In T. Thompson & S. Hupp (Eds.), Saving children at risk: Poverty and disabilities (pp. 71-86). Newbury Park, CA: Sage.

Carta, J.J., Atwater, J.B., Schwartz, I.S., & Miller, P.A. (1990). Applications of ecobehavioral analysis to the study of transitions across early education. Education and Treatment of Children, 13, 298-315.

Carta, J.J., Atwater, J.B., Schwartz, I.S., & McConnell, S.R. (1993). Developmentally appropriate practices and early childhood special education: A reaction to Johnson and McChesney Johnson. Topics in Early Childhood Special Education, 13(3), 243-254.

Carta, J., & Greenwood, C.R. (1988). Reducing academic risks in inner-city classrooms. Youth Policy, 10(7), 16-18.

Carta, J., & Greenwood, C.R. (1989). Establishing the integrity of the independent variable in early intervention programs. Early Education and Development, 1, 127-140.

Carta, J.J., Greenwood, C.R., & Kamps, D. (1989). Juniper Gardens Children's Project: Concluding remarks [Special Issue]. Education and Treatment of Children, 12(4), 425-428.

Carta, J., Sainato, D.M., & Greenwood, C.R. (1988). Advances in the ecological assessment of classroom instruction for young children with handicaps. In S.L. Odom & M.B. Karnes (Eds.), Early intervention for infants and young children with handicaps: An empirical base (pp. 217-238). Baltimore, MD: Paul H. Brookes Publishing Co.

Carta, J.J., Schwartz, I., & Atwater, J. (1992). Promoting successful transition into school: A survival skill training approach. In Conference proceedings — New directions in child and family research: Shaping Head Start in the 90's (pp. 322-325). Administration on Children, Youth and Families, U.S. Dept. of Health and Human Services, Washington, DC.

Carta, J.J., Schwartz, I.S., Atwater, J.B., & McConnell, S.R. (1991). Developmentally appropriate practice: Appraising its usefulness for young children with disabilities. Topics in Early Childhood Special Education, 11(1), 1-20.

Catts, H. (1989). Redefining dyslexia as a developmental language disorder. Annals of Dyslexia, 39, 50-64.

Catts, H. (1989). Speech production defects in developmental dyslexia. Journal of Speech and Hearing Disorders, 54, 422-428.

Catts, H. (1991). Early identification of dyslexia: Evidence from a follow-up study of speech-language impaired children. Annals of Dyslexia, 41, 163-177.

Catts, H. (1991). Early identification of reading disabilities. Topics in Language Disorders, 12, 1-16.

Catts, H. (1991). Early language disorders and reading disabilities: A clinical connection. The Clinical Connection, 5, 1-4.

Catts, H. (1991). Facilitating phonological awareness: Role of the speech-language pathologist. Language, Speech and Hearing Services in the Schools, 22, 196-203.

Catts, H. (Guest Ed.) (1991). Reading disorders: Early identification, assessment, & remediation [Special issue]. Topics in Language Disorders, 12.

Catts, H. (1992). Promoting successful transition into school: Predicting and preventing reading problems. In Conference proceedings — New directions in child and family research: Shaping Head Start in the 90's (pp. 325-327). Administration on Children, Youth and Families, U.S. Dept. of Health and Human Services, Washington, DC.

Catts, H. (1993). The relationship between speech-language impairments and reading disabilities. In H. Grimm & H. Showronek (Eds.), Language acquisition problems and reading disorders: Aspects of diagnosis and interaction. New York: Gruyter.

Catts, H. (1993). The relationship between speech-language impairments and reading disabilities. Journal of Speech and Hearing Research, 36, 948-958.

Catts, H., Hu, C., & Larrivee, L. (1992). The relationship between reading disabilities speech-language impairments. Working Papers in Language Development.

Catts, H., Hu, C., Larrivee, L., & Swank, L. (1993). The early identification of reading disabilities in speech-language impaired children. In R. Watkins & M. Rice (Eds.), Specific impairments in children: Current directions in research and instruction. Baltimore: Paul H. Brookes Publishing Co.

Catts, H., Swank, L., McIntosh, S., & Stewart, L. (1990). Precursors of reading disorders in language-impaired children. Working Papers in Language Development, 5, 44-54. Child Language Program, The University of Kansas.

Catts, H., Swank, L., Stewart, L., Larsen, A., McIntosh, S., Wiggins, K., & Hu, C. (1991). A longitudinal study of speech-language impaired children. Working Papers in Language Development. Child Language Program, The University of Kansas.

Comuzzie, D.K., O'Brien, M., & Wilcox, K.A. (1990). Are infant cries acoustically different? American Zoologist, 30. Abstract No. 611.

Connell, M.C., Carta, J.J., Randall, C., & Wilson, J. (1993). Building in-class transitions: teaching in-class transition skills to preschoolers with developmental delays through choral-response-based self-assessment and contingent praise. Education and Treatment of Children, 16, 160-174.

Culp, R.E., Watkins, R.V., Lawrence, H., Letts, D., Kelly, D.J., & Rice, M.L. (1991). Maltreated children's language and speech development: Abused, neglected, and abused and neglected. First Language, 11, 377-389.

Drumright, D.G., Seikel, J.A., & Wilcox, K.A. (1988). Speech signal acquisition and analysis using a microcomputer. Computer Users in Speech and Hearing, 4, 23-32.

Dunn, W. (Guest Ed.) (1989). Early intervention [Special issue]. American Journal of Occupational Therapy, 43(11).

Dunn, W. (1989). Integrated related services for preschoolers with neurological impairments: Issues and strategies. Remedial and Special Education, 10(3), 31-39.

Dunn, W. (Co-Ed.) (1989). Series of eight articles on specialized practice in the nationally speaking segment of the journal. American Journal of Occupational Therapy.

Dunn, W. (1989). Validity. Physical and occupational therapy in pediatrics, 9(1), 149-168. (Is also found in L. Miller [Ed.], Developing norm-referenced standardized tests). New York: The Haworth Press.

Dunn, W. (1990). A comparison of service provision models in school-based occupational therapy services. Occupational Therapy Journal of Research, 10(5), 300-320.

Dunn, W. (1990). Establishing inter-rater reliability on a criterion-referenced developmental checklist. Occupational Therapy Journal of Research, 10(6), 377-380.

Dunn, W. (1991). Application of neuroscience knowledge to the needs of individuals. In C. Royeen (Ed.), AOTA self study series: Neuroscience foundations of human performance. Rockville, MD: American Occupational Therapy Association.

Dunn, W. (1991). Assessing sensory components of performance. In C. Christiansen & C. Baum (Eds.), Human performance deficits: Assessment and intervention in occupational therapy. Thorofare, NJ: SLACK.

Dunn, W. (1991). Assessment of sensorimotor and perceptual development. In E.V. Nuttall (Ed.), Assessing and screening preschoolers. Boston, MA: Allyn & Bacon.

Dunn, W. (1991). Integrated related services. In L. Meyer, C.A. Peck, & L. Brown (Eds.), Critical issues in the lives of people with severe disabilities (pp. 353-377). Baltimore, MD: Paul H. Brookes Publishing Co.

Dunn, W. (1991). Introduction to the spinal cord & brain stem. Nautilis (2:6) (CD-ROM), Dublin, OH: Metatee-Discovery Systems.

Dunn, W. (1991). Motivation. In C. Royeen (Ed.), AOTA self study series: Neuroscience foundations of human performance. Rockville, MD: American Occupational Therapy Association.

Dunn, W. (Ed.) (1991). Pediatric occupational therapy: Facilitating effective service provision. Thorofare, NJ: SLACK.

Dunn, W. (1991). Sensory dimensions of performance. In C. Christiansen & C. Baum (Eds.), Human performance deficits: Assessment and intervention in occupational therapy (pp. 231-258). Thorofare, NJ: SLACK.

Dunn, W. (1991). Assessing sensory performance enablers. In C. Christiansen & C. Baum (Eds.), Human performance deficits: Assessment and intervention in occupational therapy (pp. 471-506). Thorofare, NJ: SLACK.

Dunn, W. (1991). Tests used by other professionals. In W. Dunn (Ed.), Pediatric occupational therapy: Facilitating effective service provision (pp. 345-367). Thorofare, NJ: SLACK.

Dunn, W. (1991). The sensorimotor systems: A framework for assessment and intervention. In F.P. Orelove & D. Sobsey (Eds.), Educating children with multiple disabilities: A transdisciplinary approach (2nd ed., pp. 33-78). Baltimore: Paul H. Brookes Publishing Co.

Dunn, W. (1992). Consultation: How, when, and why. In C.B. Royeen (Ed.), AOTA self study series: Lesson 5. Rockville, MD: American Occupational Therapy Association.

Dunn, W. (1992). Occupational therapy evaluation. In F.R. Brown & E.H. Aylward (Eds.), Diagnosis and management of learning disabilities (pp. 111-122). Boston, MA: College Hill Press.

Dunn, W. (1993). Grip strength of children ages 3-8 years using a modified sphygmomanometer: Comparison of typical children to children with rheumatic disorders. American Journal of Occupational Therapy.

Dunn, W. (in press). Occupational therapy. In H.G. Garner (Ed.), Teamwork in the Helping Professions. Baltimore, MD: Paul H. Brookes Publishing Co.

Dunn, W. (in press). Technology support for basic science instruction in occupational therapy education. Interactive Healthcare. Stewart Publishing.

Dunn, W., & Campbell, P.H. (1991). Designing pediatric service provision. In W. Dunn (Ed.), *Pediatric occupational therapy: Facilitating effective service provision*, (pp. 139-160). Thorofare, NJ: SLACK.

Dunn, W., Campbell, P.H., Oeter, P.L., Hall, S., & Berger, E. (1989). *Guidelines for occupational therapy services in early intervention and preschool services*. Rockville, MD: American Occupational Therapy Association.

Dunn, W., & DeGangi, G. (1993). Sensory integration and neurodevelopmental treatment for educational programming. In C.B. Royeen (Ed.), *AOTA self study series on schools*. Rockville, MD: American Occupational Therapy Association.

Dunn, W., & McGourty, L. (1989). Application of uniform terminology to practice. *American Journal of Occupational Therapy*, *43*(12), 817-831.

Dunn, W., & Oetter, P. (1991). Application of assessment principles. In W. Dunn (Ed.), *Pediatric occupational therapy: Facilitating effective service provision* (pp. 75-124). Thorofare, NJ: SLACK.

Dunn, W., & Oetter, P. (1991). Application of the program planning and service provision process. In W. Dunn (Ed.), *Pediatric occupational therapy: Facilitating effective service provision* (pp. 161-212). Thorofare, NJ: SLACK.

Dunn, W., & Rask, S. (1989). Entry level and specialized practice: A professional encounter. *American Journal of Occupational Therapy*, *43*(1), 7-9.

Evans, D.P. (1988). Pharmacy as a profession. *Welcome Trends in Pharmacy*, *10*, 5-11.

Evans, D.P. (1988). Pharmacy as a profession, Part I. *Welcome Trends in Hospital Pharmacy*, *10*(9), 2-8.

Evans, D.P. (in press). Gender differences in focal concerns of parents faced with a treatment/nontreatment decision of a "Baby Doe." *Social Science and Medicine*.

Evans, D.P. (in press). Pharmacy as a profession, Part II. *Welcome Trends in Hospital Pharmacy*.

Evans, D.P., & Barber, P.A. (in press). Role of the physician in medical decision making for infants born with disabilities. In G.L. Albrecht & J.A. Levy (Eds.), *Disability and chronic illness across the life course* (Vol. II). Greenwich, CT: JAI Press.

Fagot, B., & O'Brien, M. (in press). Activity level in young children: Cross-age stability, situational influences, correlates with temperament, and perception of problem behavior. *Merrill Palmer Quarterly*.

Fawcett, S.B. (1988). Roleplaying assessment instruments. In M. Hersen & A.S. Bellack (Eds.), Dictionary of behavioral assessment instruments (pp. 385-389). New York: Pergamon Press.

Fawcett, S.B. (in press). Some emerging standards for community research and action. In P. Tolan, C. Keys, F. Chertok, & L.E. Jason (Eds.), Researching community psychology: Integrating theories and methodologies. Washington, DC: American Psychological Association.

Fawcett, S.B., Suarez de Balcazar, Y., Whang-Ramos, P.L., Seekins, T., Bradford, B., & Matthews, R.M. (1988). The concerns report: Involving consumers in planning for rehabilitation and independent living services. American Rehabilitation, 14(3), 17-19.

Fey, M., Catts, H., & Larrivee, L. (in press). Preparing preschool children with language impairments for the transitions to school. In M. Fey, J. Windsor, & S. Warren (Eds.), Language impairments in the primary school years: The current state and future directions. Baltimore, MD: Paul H. Brookes Publishing Company.

Fowler, S.A. (Guest Ed.) (1990). P.L. 99-457 [Special issue]. Journal of Early Intervention.

Fowler, S.A., Hains, A.H., & Rosenkoetter, S.E. (1990). The transition between early intervention services and preschool services: Administrative and policy issues. Topics in Early Childhood Special Education, 9(4), 55-65.

Fowler, S., Schwartz, I., & Atwater, J. (1991). Perspectives on the transition from preschool to kindergarten for children with disabilities and their families. Exceptional Children, 58(2), 136-145.

Frost, H.L., McCluskey-Fawcett, K., & Sharp, J.A. (1989). Adolescent sexual behavior: A model for behavioral strategies. The Behavior Therapist, 12, 239-242.

Graff, C., Mulligan Ault, M. Guess, D. Taylor, M., & Thompson, B. (1990). Health care for students with disabilities. An illustrated medical guide for the classroom. Baltimore: Paul H. Brookes Publishing Co.

Greenwood, C.R. (Ed.) (1989). Juniper Garden's Children's Project [Special issue]. Education and Treatment of Children, 12(4).

Greenwood, C.R. (1991). The behavior analyst consulting model: Identifying and validating naturally effective instructional procedures. Journal of Behavioral Education, 1(4), 165-191.

Greenwood, C.R. (1991). Classwide peer tutoring: Longitudinal effects on the reading, language, and mathematics achievement of at-risk students. Reading, Writing, and Learning Disabilities International, 7, 105-123.

Greenwood, C.R. (1991). Longitudinal analysis of time, engagement, and academic achievement in at-risk versus non-risk students. Exceptional Children, 57(6), 521-535.

Greenwood, C.R., & Carta, J. (1988). An ecobehavioral interaction analysis of instruction within special education. In E.L. Meyen, G.A. Vergason, & R.J. Whelan (Eds.), Effective instructional strategies (pp. 505-521). Denver, CO: Love Publishing.

Greenwood, C.R., Carta, J.J., Arreaga-Mayer, C., & Rager, A. (1991). The behavior analyst consulting model: Identifying and validating naturally effective instructional procedures. Journal of Behavioral Education, 1(4), 165-191.

Greenwood, C.R., Carta, J.J., & Atwater, J.B. (1991). Ecobehavioral analysis in the classroom: Review and implications. Journal of Behavioral Education, 1, 59-77.

Greenwood, C.R., Carta, J., & Hall, R.V. (1988). The use of peer tutoring strategies in classroom management and educational instruction. School Psychology Review, 17(2), 258-275.

Greenwood, C.R., Carta, J.J., Hart, B., Kamps, D., Terry, B., Arreaga-Mayer, C., Atwater, J., Walker, D., Risley, T., & Delquadri, J.C. (1992). Out of the laboratory and into the community: 26 years of applied behavior analysis at the Juniper Gardens Children's Project. American Psychologist, 47, 1464-1474.

Greenwood, C.R., Carta, J.J., Hart, B., Thurston, L., & Hall, R.V. (1989). A behavioral approach to research on psychosocial retardation. Education and Treatment of Children, 12(4), 330-346.

Greenwood, C.R., Carta, J.J., & Kamps, D.M. (1990). Ecobehavioral analysis of classroom instruction. In S.R. Schroeder (Ed.), Ecobehavioral analysis and developmental disabilities: The twenty-first century (pp. 33-63). New York: Springer-Verlag.

Greenwood, C.R., Carta, J.J., & Kamps, D.M. (1990). Teacher versus peer-mediated instruction: A review of educational advantages and disadvantages. In H. Foot, M. Morgan, & R. Shute (Eds.), Children helping children (pp. 177-206). Chichester, England: Wiley.

Greenwood, C.R., Carta, J.J., & Mahesky, L. (in press). Peer tutoring in the regular education classroom. In G. Stones, M.R. Shinn, & H.M. Walker (Eds.), Interventions for achievement and behavior problems. Washington, DC: National Association of School Psychologists.

Greenwood, C.R., Carta, J., Walker, D., Arreaga-Mayer, C., & Dinwiddie, G. (1988). Special education curriculum and instruction: Peer tutoring. In M. Semmel (Ed.), International encyclopedia of education: Research studies supplement (Vol. 1). NY: Pergamon Press.

Greenwood, C.R., Maheady, L., & Carta, J.J. (1991). Peer tutoring programs in the regular education classroom. In G. Stoner, M.R. Shinn, & H.M. Walker (Eds.), Interventions for achievement and behavior problems (pp. 179-200). Washington, DC: National Association for School Psychologists (NASP).

Greenwood, C.R., Walker, D., & Carta, J.J. (in press). Children, poverty, and development: Contemporary problems/contemporary solutions. Contemporary Issues in Developmental Disabilities.

Greenwood, C.R., Walker, D., & Terry, B. (in press). Classroom management. In L.W. Craighead, W.E. Craighead, A.E. Kazdin, & M.J. Mahoney (Eds.), Cognitive-behavioral interventions. New York: Pergamon.

Guess, D., Roberts, R., Siegel-Causey, E., Mulligan Ault, M., Guy, B., Thompson, B., & Rues, J. (in press). An analysis of behavior state conditions and associated environmental variables among students with profound handicaps. American Journal on Mental Retardation.

Guess, D., Roberts, R., Siegel-Causey, E., Mulligan Ault, M., Guy, B., Thompson, B., & Rues, J. (1991). Investigation into the state behaviors of students with severe and profound handicapping conditions. Monograph, Department of Special Education, University of Kansas, Lawrence, KS.

Guess, D., Siegel-Causey, E., Roberts, S., Mulligan Ault, M., Rues, J., Thompson, B., & Guy, B. (in press). Assessment and analysis of behavior state and related variables among students with profoundly handicapping conditions. Journal for the Association for Persons with Severe Handicaps.

Guess, D., & Thompson, B. (1990). An Essay: Preparation of personnel to educate students with severe and multiple disabilities: A time for change? In L. Meyer, C. Peck, & L. Brown (Eds.), Critical issues in the lives of people with severe disabilities. Baltimore: Paul H. Brookes Publishing Co.

Hadley, P.A., & Rice, M.L. (1991). Conversational responsiveness in speech and language impaired preschoolers. Journal of Speech and Hearing Research, 34, 1308-1317.

Hadley, P.A., & Rice, M.L. (1993). Parental judgments of preschoolers' speech and language development: A resource for assessment and IEP planning. Seminars in Speech and Language, 14(4), 278-288.

Hains, A., Fowler, S., Schwartz, I., Kottwitz, J.E., & Rosenkoetter, S. (1989). A comparison of preschool and kindergarten teachers' expectation for school readiness. Early Childhood Research Quarterly, 4, 75-88.

Hains, A.H., Rosenkoetter, S.E., & Fowler, S.A. (1991). Transition planning with families in early intervention programs. Infants and Young Children, 3(4), 38-47.

Horowitz, F.D., & O'Brien, M. (1989). Children as futures: In the interest of the nation. American Psychologist, 44, 441-445.

Hughes, P., & Dunn, W. (1989). Preassessment: An effective tool for the rural therapist. Development disabilities - Special interest section newsletter, 12(4), 3-5.

Huston, A.C., Wright, J.C., Rice, M.L., Kerkman, D., & St. Peters, M. (1990). The development of television viewing patterns in early childhood: A longitudinal investigation. Developmental Psychology, 26, 409-420. (Reprinted in Chinese in: China Central Television [Eds.], Advance in television research. Beijing, P.R.C.: Beijing Broadcasting Institute Publishing Press, translated by Zhang Lin-Zhen [1991]).

Irving, L.M., McCluskey-Fawcett, K.A., & Thissen, D. (1990). Sexual attitudes and behavior of bulimic women: A preliminary investigation. Journal of Youth and Adolescence, 19, 395-411.

Johnson, J., Watkins, R., & Rice, M.L. (1992). Bimodal bilingual language development in a hearing child of deaf parents. Applied Psycholinguistics, 13, 31-52.

Johnson, M.D., & Fawcett, S.B. (1988). Quality circles: Enhancing responsiveness of service agencies to consumers. American Rehabilitation, 14(3), 20-21.

Kamhi, A., & Catts, H. (1989). Reading disabilities: A developmental language perspective. Boston: College-Hill Press.

Kamhi, A., Catts, H., Mauer, D., Apel, K., & Gentry, B. (1988). Phonological and spatial processing abilities in language and reading-impaired children. Journal of Speech and Hearing Disorders, 53, 316-327.

Kamhi, A., Mauer, D., & Catts, H. (1990). Encoding deficits in reading disabled children. Journal of Learning Disabilities, 23, 632-636.

Kamps, D., Carta, J.J., Delquadri, J.C., Arreaga-Mayer, C., Terry, B., & Greenwood, C.R. (1989). School-based research and intervention. Education and Treatment of Children, 12(4), 359-390.

Kamps, D., Greenwood, C.R., & Leonard, B. (in press). Ecobehavioral assessment in classrooms serving children with autism and developmental disabilities. In R. Prinz (Ed.), Advances in Behavior Assessment of Children and Families.

Kelly, D.J., & Rice, M.L. (in press). Preferences for verb interpretation in children with specific language impairment. Journal of Speech and Hearing Research (JSHR).

Kochanevich-Wallace, P.M., McCluskey-Fawcett, K.A., Meck, N.E., & Simons, C.J.R. (1988). Method of delivery and parent-newborn interaction. Journal of Pediatric Psychology, 13(2), 213-221.

Kohler, F.W., & Greenwood, C.R. (in press). Classwide peer tutoring: Examining natural contingencies of peer reinforcement. Journal of Applied Behavior Analysis.

Kohler, F.W., Schwartz, I.S., Cross, J.A., & Fowler, S.A. (1989). The effects of two alternating peer intervention roles on independent work skills. Education and Treatment of Children, 12, 205-218.

McCluskey-Fawcett, K.A. (1988). Learning disabilities: Traceable to the womb? A review of Learning disabilities and prenatal risk (M. Lewis, ed.). Contemporary Psychology, 33, 316-317.

McCluskey-Fawcett, K. (1990). Who cares for the children? A review of Child support: From debt collection to social policy (A.J. Kahn & S.B. Kamerman, eds.). Contemporary Psychology, 35, 350-351.

McCluskey-Fawcett, K. (1991). Adolescent pregnancy and parenting. The Psychology Teacher Network, 1, 2-4.

McCluskey-Fawcett, K. (1991). Caring, sharing, and helping revisited. A review of The roots of prosocial behavior in children (N. Eisenberg & P.H. Mussen, eds.). Contemporary Psychology, 36, 1081-1082.

McCluskey-Fawcett, K. (1991). In the carefully mentored, fear gives way to faculty. Viewpoints, p. 8.

McCluskey-Fawcett, K., & Green-Bailey, P. (1992). Using community service to teach developmental psychology. Teaching of Psychology, 19, 150-152.

McCluskey-Fawcett, K., O'Brien, M., Robinson, M.P., & Asay, J. (1992). Early transitions for the parents of premature infants: Implications for intervention. Infant Mental Health Journal, 13, 147-156.

McCluskey-Fawcett, K., O'Brien, M., & Soliday, E. (in press). Premature, low-birth-weight and technology assisted infants. In M. C. Roberts (Ed.), Handbook of Pediatric Psychology (2nd ed.). New York: Guilford.

Meck, N.E. (1990). Study guide to accompany Mussen, Conger, Kagan, & Huston's: Child Development and Personality (7th ed.). New York: Harper & Row, Publishers.

Meck, N.E. (1990). Instructor's manual to accompany Mussen, Conger, Kagan, & Huston's: Child Development and Personality (7th ed.). New York: Harper & Row, Publishers.

Meck, N.E. (1991). Study guide to accompany J.J. Conger's: Adolescence and Youth (4th ed.). New York: Harper-Collins, Publisher.

Miller, D.A.F., McCluskey-Fawcett, K., & Irving, L.M. (1992). The relationship between childhood sexual abuse and subsequent onset of bulimia. Child Abuse and Neglect, 17, 305-314.

Miller, D.A.F., McCluskey-Fawcett, K., & Irving, L.M. (in press). Correlates of bulimia nervosa: Early family mealtime experiences. Adolescence.

Mira, M.P., Meck, N.E., & Tyler, J.S. (1989). School psychologists knowledge of traumatic head injury: Implications for training. Diagnostique.

O'Brien, M. (1992). Gender identity and sex roles. In V.B. Van Hasselt & M. Herson (Eds.), Handbook of social development: A lifespan perspective (pp. 325-345). New York: Plenum.

O'Brien, M. (1992). Promoting successful transition into school: A review of current intervention practices. In Conference Proceedings — New Directions in Child and Family Research: Shaping Head Start in the 90's (pp. 317-320). Administration on Children, Youth and Families, U.S. Dept. of Health and Human Services, Washington, DC.

O'Brien, M., & Dale, D.A. (in press). Family-centered services in the neonatal intensive care unit: A review of research. Journal of Early Intervention.

O'Brien, M., Davis, J.J., & Horowitz, F.D. (1988). Object labels in parental speech and children's early vocabulary. Kansas Working Papers in Language Development, 101-114.

O'Brien, M., Johnson, J., & Anderson-Goetz, D. (1989). Measuring the quality of mother-infant interaction: Situational effects. Infant Behavior and Development, 12, 451-464.

Oetting, J.B., & Rice, M.L. (1991). Influence of the social context on pragmatic skills of adults with mental retardation. American Journal on Mental Retardation, 95, 435-443.

Oetting, J.B., & Rice, M.L. (in press). Plural acquisition in children with specific language impairment. Journal of Speech and Hearing Research.

Papini, D.R., Datan, N., & McCluskey-Fawcett, K.A. (1988). An observational study of affective and assertive family interactions during adolescence. Journal of Youth and Adolescence, 17(6), 477-492.

Pye, C., Wilcox, K.A., & Siren, K. (1988). Refining transcriptions: The significance of transcriber 'errors'. Journal of Child Language, 15, 17-37.

Rice, M.L. (1988). The speech and language impaired child. In E. Meyen & T. Skrtic (Eds.), Exceptional children and youth (3rd ed., pp. 235-263). Denver: Love Publishing.

Rice, M.L. (1989). Children's language acquisition. American Psychologist [Special issue], 44, 149-156.

Rice, M.L. (1989). Synthesis/commentary on language teaching and learning strategies. In M.L. Rice & R.L. Schiefelbusch (Eds.), The Teachability of Language. Baltimore, MD: Paul H. Brookes Publishing Co.

Rice, M.L. (1990). Preschoolers' QUIL: Quick incidental learning of words. In C. Snow & G. Conti-Ramsden (Eds.), Children's Language (Vol. 7, 171-195). Hillsdale, NJ: Lawrence Erlbaum.

Rice, M.L. (1991). Children with specific language impairment: Toward a model of teachability. In N.A. Krasnegor, D.M. Rumbaugh, R.L. Schiefelbusch, & M. Studdert-Kennedy (Eds.), Biological and behavioral determinants of language development (pp. 447-480). Hillsdale, NJ: Erlbaum.

Rice, M.L. (1993). "Don't talk to him: He's weird". The role of language in early social interactions. In A.P. Kaiser & D.B. Gray (Eds.), Enhancing Children's Communication: Research Foundations for Intervention (pp. 139-158). Baltimore, MD: Paul H. Brookes Publishing Co.

Rice, M.L. (1993). Social consequences of specific language impairment. To appear in H. Grimm, & H. Skowronek (Eds.), Language Acquisition Problems and Reading Disorders: Aspects of diagnosis and intervention (pp. 111-128). New York: DeGruyter.

Rice, M.L. (in press). Grammatical categories of specifically language impaired children. To appear in R. V. Watkins & M.L. Rice (Eds.), Specific language impairments in children: Current directions in research and intervention. Baltimore, MA: Paul H. Brookes Publishing Co.

Rice, M.L., & Bode, J. (1993). GAPS in the verb lexicons of children with specific language impairment. First Language, 13, 113-131.

Rice, M.L., Buhr, J.C., & Nemeth, M. (1990). Fast mapping word learning abilities of language delayed preschoolers. Journal of Speech and Hearing Disorders, 55, 33-42.

Rice, M.L., Buhr, J., & Oetting, J. (1992). Specific language-impaired children's quick incidental learning of words: The effect of a pause. Journal of Speech and Hearing Research, 35, 1040-1048.

Rice, M.L., Hadley, P.A., & Alexander, A.L. (1993). Social biases toward children with speech and language impairments: A correlative causal model of language limitations. Applied Psycholinguistics, 14.

Rice, M.L., Huston, A.C., Truglio, R., & Wright, J.C. (1990). Words from Sesame Street: Vocabulary learning while viewing. Developmental Psychology, 26, 421-428.

Rice, M.L., & Oetting, J.B. (in press). Morphological deficits of children with SLI: Evaluation of number marking and agreement. Journal of Speech Language and Hearing Research.

Rice, M.L., Oetting, J.B., Marquis, J., Bode, J., & Pae, S. (in press). Frequency of input effects on word comprehension of children with specific language impairment. Journal of Speech and Hearing Research.

Rice, M.L., & O'Brien, M. (1990). Transitions: Times of change and accommodation. Topics in Early Childhood Special Education [Special issue], 9(4), 1-14.

Rice, M., & Pae, S. (1992). Recent trends in research on child language disorders. Sae Kukosanghoal, 2(3). Seoul: National Research Institute of Korea.

Rice, M.L., & Schiefelbusch, R.L. (Eds.) (1989). The Teachability of Language. Baltimore, MD: Paul H. Brookes, Publishing Co.

Rice, M.L., & Schuele, C.M. (in press). Speech and language impairments. To appear in E. Meyen, & T. Skrtic (Eds.), Exceptional children and youth: An introduction (4th ed.).

Rice, M.L., Sell, M.A., & Hadley, P.A. (1990). The Social Interactive Coding System (SICS): An on-line, clinically relevant descriptive tool. Language, Speech, and Hearing Services in the Schools, 21(1), 2-14.

Rice, M.L., Sell, M.A., & Hadley, P.A. (1991). Social interactions of speech and language impaired children. Journal of Speech and Hearing Research, 34, 1299-1307.

Rice, M.L., & Wilcox, K.A. (Eds.) (in press). Language Acquisition Preschool. Baltimore, MD: Paul H. Brookes Publishing Co.

Rice, M.L., Wilcox, K., & Hadley, P. (1992). Promoting successful transition into school: The role of language and social intervention skills. In Conference Proceedings — New Directions in Child and Family Research: Shaping Head Start in the 90's (pp. 320-322). Administration on Children, Youth and Families, U.S. Dept. of Health and Human Services, Washington, DC.

Sainato, D.M., & Carta, J.J. (1992). Classroom influences on the development of social competence of preschool children with disabilities: Ecology, teachers, and peers. In S.L. Odom, S.R. McConnell, & M.A. McEvoy (Eds.), Social competence of young children with disabilities: Issues and strategies for intervention. Baltimore: Paul H. Brookes Publishing Co.

Schwartz, I.S. (1991). The study of consumer behavior and social validity: An essential partnership for applied behavior analysis. Journal of Applied Behavior Analysis, 24, 205-214.

Schwartz, I.S., Anderson, S.R., & Halle, J.W. (1989). Training teachers to use naturalistic time delay: Effects on teacher behavior and on the language use of students. The Journal of the Association for Persons with Severe Handicaps, 14, 48-57.

Schwartz, I.S., & Baer, D.M. (1991). Social-validity assessments: Is current practice state-of-the-art? Journal of Applied Behavior Analysis, 24, 189-204.

Seekins, T., Matthews, R.M., Fawcett, S.B., Jones, M.L., & Budde, J.F. (1988). A market-oriented strategy of applied research in independent living and rehabilitation. Journal of Rehabilitation, 54(1), 35-38.

Seikel, J.A., Wilcox, K.A., & Davis, J. (1990). Dysarthria of Motor Neuron Disease: Clinician judgements of severity. Journal of Communication Disorders, 23, 417-431.

Seikel, J.A., Wilcox, K.A., & Davis, J. (1991). Dysarthria of ALS: Longitudinal measures of segmental durations. Journal of Communication Disorders, 24, 393-409.

Sergeant, J.F. (Ed.) (1989). Resources on families and disability: Audiovisuals, printed material and information/referral sources for families and professionals. Beach Center on Families and Disability, The University of Kansas, Lawrence, Kansas.

Sergeant, J.F., & Shaffer, H. (Eds.) (1989). Annotated bibliography: Publications of Beach Center researchers. Beach Center on Families and Disability, The University of Kansas, Lawrence, KS.

Sergeant, J.F., Morningstar, M.E., & Bateman, D.F. (Eds.) (1990). Resources: Life after high school for students with moderate and severe disabilities. Beach Center on Families and Disability, The University of Kansas, Lawrence, KS.

Sheikh, L., O'Brien, M., & McCluskey-Fawcett, K. (1993). Parent preparation for the NICU-to-home transition: Staff and parent perceptions. Children's Health Care, 22, 227-239.

Siren, K.A., & Wilcox, K.A. (1990). A comparison of phonetic and orthographic transcription methods. Child Language Teaching and Therapy, 6, 127-146.

Soliday, E., McCluskey-Fawcett, K.A., & Meck, N. (in press). Stress, coping, and social support in foster mothers of drug-exposed and other at-risk toddlers. Children's Health Care.

Strain, P., McConnell, S.R., Carta, J.J., Neisworth, J., Fowler, S., & Wolery, M. (in press). Behaviorism and early intervention. Topics in Early Childhood Special Education.

Suarez de Balcazar, Y., Bradford, B., & Fawcett, S.B. (1988). Common concerns of disabled Americans: Issues and options. Social Policy, 19(2), 29-35.

Suarez de Balcazar, Y., Seekins, T., Paine, A., Fawcett, S.B., & Mathews, R.M. (in press). Self-help and social support groups for people with disabilities: A descriptive report. *Rehabilitation Counseling Bulletin*.

Swank, L., & Catts, H. (1991). Phonological awareness and reading ability. *Working Papers in Language Development*, *6*(1). Child Language Program, The University of Kansas.

Swank, L., & Catts, H. (in press). Predicting first grade reading ability from tests of phonological awareness. *Working Papers in Language Development*. Child Language Program, The University of Kansas.

Thiele, J.E. (in press). Federal legislation and intervention for young children with disabilities. In E. Schopler, M.E. Van Bourgandien, & M. Bristol (Eds.), *Preschool issues in autism and related developmental handicaps*. New York: Plenum Publishing Corporation.

Thiele, J.E., & Hamilton, J.L. (1991). Implementing the early childhood formula: Programs under P.L. 94-457. *Journal of Early Intervention*, *15*(1), 5-12.

Thompson, B., Wegner, J., Wickham, D., Ault, M., Reinertson, B., Shanks, P., & Guess, D. (in press). Including young children with severe disabilities into a Montessori community preschool: Issues of transition. *FOCUS: On exceptional children*. Denver, CO: Love Publishing Co.

Thompson, B., Wickham, D., Shanks, P., Wegner, J., Mulligan Ault, M., Reinertson, B., & Guess, D. (1991). Expanding the circle of inclusion: Integrating young children with severe multiple disabilities into Montessori classrooms. *Montessori Life*, *3*(1), 11-15.

Turnbull, A.P., & Sergeant, J.F. (1990). *Instructor's manual to accompany families, professionals, and exceptionality*. Columbus, OH: Macmillan Publishing Co.

Watkins, R.V., & Rice, M.L. (1991). Verb particle and preposition acquisition in language-impaired preschoolers. *Journal of Speech and Hearing Research*, *34*, 1130-1141.

Watkins, R.V., & Rice, M.L. (Eds.) (1993). *Specific language impairments in children: Current directions in research and intervention*. Baltimore, MD: Paul H. Brookes Publishing Co.

Watkins, R.V., Rice, M.L., & Moltz, C.C. (1993). Verb use by language-impaired and normally developing children. *First Language*, *13*, 133-143.

Wilcox, K.A. (1989). Voice disorders in children: An introduction. *Language, Speech, and Hearing Services in the Schools*, *20*, 93.

Wilcox, K.A., & Aasby, S.M. (1988). The performance of monolingual and bilingual children on the TACL. Language, Speech, and Hearing Services in the Schools, 19, 34-41.

Wilcox, K.A., Daniloff, R.G., & Ali, L. (1984). Speech sound discrimination in /s/-misarticulating children. In R.G. Daniloff (Ed.), Articulation assessment and treatment issues. San Diego, CA: College-Hill Press.

York, J., Rainforth, B., & Dunn, W. (1991). Training needs of physical and occupational therapists serving school aged learners with severe disabilities. In A. Kaiser & C. McWhorter (Eds.), Critical issues in preparing personnel to work with persons who are severely handicapped. Baltimore: Paul H. Brookes Publishing Co.

MANUSCRIPTS IN PREPARATION OR SUBMITTED

Arreaga-Mayer, C., Carta, J., & Tapia, Y. Ecobehavioral assessment: A methodology for evaluating instruction for exceptional culturally and linguistically diverse students. Journal of Diverse Exceptional Learners.

Dunn, W. Analysis of the preschool individualized education planning process: Current practices and directions for the future. Journal of Early Intervention.

Dunn, W. (in preparation). Impact of inservice and planning time on the team's attention to transition issues.

Fowler, S.A., & Meck, N.E. (in preparation). Formal and informal sources of support for families in the NICU.

Frost, H.L., McCluskey-Fawcett, K., & Irving, L.M. Responsible sexual behavior: Communication, contraception, and "safer sex" practices. Psychology and Health (provisionally accepted).

Gertner, B.L., Rice, M.L., & Hadley, P.A. The influence of communicative competence on peer preferences in a preschool classroom.

Greenwood, C.R., Carta, J.J., Hart, B., Kamps, D., Terry, B., & Delquadri, J.C. Out of the laboratory and into the community: Twenty-six years of applied behavior analysis at the Juniper Gardens Children's Project. American Psychologist.

Greenwood, C.R., & Terry, B. The longitudinal effects of classwide peer tutoring II: Sixth grade follow-up. Journal of Educational Psychology.

Hadley, P.A., Wilcox, K.A., & Rice, M.L. Talking at School: Teacher expectations in preschool and kindergarten. Journal of Early Intervention.

Meck, N.E. (in preparation). Identifying the education and support needs of foster and adoptive families caring for infants who were prenatally substance-exposed.

Meck, N.E., Fowler, S.A., Claflin, K., & Rasmussen, L. (in preparation). Evaluating the use of transition planning in the NICU.

Meck, N.E., Fowler, S.A., Claflin, K., Rasmussen, L. Parent's perceptions of the NICU 1- and 7-months post discharge. Journal of Early Intervention.

Metzger, L.K. A study of the musical preference of psychiatric patients in a short-term treatment center. Journal of Music Therapy.

Metzger, L.K. Changing dreams; Building hope. National Association of Social Work Journal.

Norman, S., & McCluskey-Fawcett, K. (in preparation). Adult development: Life experiences of older women.

O'Brien, M. (in preparation). Perceptions of child-rearing difficulties in parents of infants and toddlers.

O'Brien, M., & Bi, X. (in preparation). Influence of classroom play context on teacher language to toddlers.

O'Brien, M., McCluskey-Fawcett, K., & Asay, J.H. (in preparation). Bringing a premature infant home: Adjustment to parenthood during the NICU-to-home transition.

O'Brien, M., Rice, M.L., & Roy, C. (in preparation). Developmental outcomes of NICU infants.

O'Brien, M., Rice, M.L., & Thiele, J. (in preparation). Developmental and health status of NICU graduates at age 3.

Rice, M.L., Cleave, P., Oetting, J.B., & Pae, S. (in preparation). Learning novel names for count/substance objects: The contribution of grammatical cues.

Schuele, C.M., Rice, M.L., & Wilcox, K. (in preparation). Redirects: A strategy to increase peer interactions.

Schwartz, I.S., Carta, J.J., & Atwater, J.B. Bridging the research-to-practice gap in early intervention: Identifying problems, finding solutions. Forum on Special Education.

Sergeant, J.F. Collaborating with families. In M.L. Rice & K.A. Wilcox (Eds.), Language Acquisition Preschool. Baltimore, MD: Brookes Publishing Co.

Sergeant, J.F. Life after LAP. In M.L. Rice & K.A. Wilcox (Eds.), Language Acquisition Preschool. Baltimore, MD: Brookes Publishing Co.

Soliday, E., McCluskey-Fawcett, K., & Meck, N. Foster mothers' stress, coping, and social support in parenting drug-exposed and other at-risk toddlers. Infant Mental Health Journal.

Storkamp, B.J., McCluskey-Fawcett, K., & Meck, N.E. The effects of prenatal drug-exposure on toddlers' temperament, development, and play behavior. Children's Health Care.

Wilcox, K.A., & Siren, K.A. The acquisition of a stop consonant voicing distinction: Evidence from a normal hearing child of deaf parents. Journal of Communication Disorders.

OTHER MATERIALS PRODUCED

DATE	MATERIALS
1988	Carta, J., & Greenwood, C. (Project directors-3.1). Code for Instructional Structure and Student Academic Response: Mainstream Version (MSCISSAR) (assessment instrument). Juniper Gardens Children's Project 1614 Washington Blvd., Kansas City, KS.
10/88	Rice, M.L., & Wilcox, K.A. (Project directors-2.3). Language Acquisition Preschool (LAP) Brochure. Contact: Dept. of Speech-Language-Hearing, 3031 Dole Center, University of Kansas, Lawrence, KS 66045.
1989	Rice, M.L., & O'Brien, M. Transitions: Times of change and accommodation. KECRI Working Paper (Abridged version published in Topics in Early Childhood Special Education [Special issue], 1990, 9(4), 1-14.).
1989	Rice, M.L., & Wilcox, K.A. (Eds.). Language Acquisition Preschool-Curriculum Materials Series. ● Bunce, B.H., Watkins, R.V., & Hadley, P.A. (1989). Language therapy: Implementation and supervision. ● Liebhaber, G.K. (1989). Staff Resource Guide (Manual/guide). ● Liebhaber, G.K. (1989). Parent Resource Guide (Manual/guide). ● Rice, M.L., & Wilcox, K.A. (1989). Assessment Protocol (Manual/guide). ● Rice, M.L., Wilcox, K.A., Bunce, B.H., Kelly, D.J., Liehaber, G.K., Watkins, R.V. (1989). Program Description (Manual/guide). Contact: KECRI Dissemination, 1082 Dole Center, University of Kansas, Lawrence, KS 66045
1989/1990	Fowler, S.A. Transitions to and from early childhood services (Workshop materials, Project 2.1). Contact: S. Fowler, Dept. of Special Education, 1310 South 6th St., 288 Education, University of Illinois, Champaign, IL 61820.
1989, Summer	Etzel. B., & LeBlanc, J. (Project directors-2.4), Parent Skills Survey — Assessment Learning Classroom (Assessment instrument), HDFL, Univ. of Kansas, 4001 Dole Center, Lawrence, KS 66045.
1989, June	Roy, C.R. (Ed.), Kansas Early Childhood Research Institute Brochure, M.L. Rice & M. O'Brien (Project investigators). Contact: KECRI Dissemination, 1082 Dole Center, University of Kansas, Lawrence, KS 66045.
1989, September	Roy, C.R. (Ed.), Transitions, Newsletter of the Kansas Early Childhood Research Institute, Vol. 1, No. 1. M.L. Rice & M. O'Brien (Project investigators). Contact: KECRI Dissemination, 1082 Dole Center, University of Kansas, Lawrence, KS 66045.
1989, Fall	Rice, M.L., & Wilcox, K.A. (Project directors-2.3). Language Acquisition Preschool, Curriculum: Development & Implementation (Manual/guide). Contact: Dept. of Speech-Language-Hearing, 3031 Dole Center, University of Kansas, Lawrence, KS 66045.
1990, January	Thompson, B., Wegner, J., Wickham, D., Shanks, P., Reinterson, B., Mulligan-Ault, M. An investigation of the transition and integration of preschoolers with severe and profound multiple disabilities into a Montessori community preschool program: Activities in progress and preliminary results. (Working paper, Project 2.3). Contact: B. Thompson, Dept. of Special Education, 3001 Dole Center, University of Kansas, Lawrence, KS 66045.
1990, April	Fowler, S.A., & Cooper, A. (Project directors-2.1), Reference list on transition into preschool; integrated preschools; and children's social interactions and social skills. Contact: S. Fowler, Dept. of Special Education, 1310 South 6th St., 288 Education, University of Illinois, Champaign, IL 61820.
1990, April	Evans, D. (Project director-1.1), Reference list on children born with spina bifida and the effects on the family of having a child with spina bifida. Contact: D. Evans, Dept. of Sociology, 716 Fraser Hall, University of Kansas, Lawrence, KS 66045.

DATE	MATERIALS
1990, Summer	Evans, D. (Project director-1.1), evaluation questionnaire for Josh's Birthday video. Contact: D. Evans, Dept. of Sociology, 716 Fraser Hall, University of Kansas, Lawrence, KS 66045.
1990, Summer	Evans, D. (Project director-1.1), Josh's Birthday. Videotape for new parents of children with spina bifida (Project 1.1). Contact: D. Evans, Dept. of Sociology, 716 Fraser Hall, University of Kansas, Lawrence, KS 66045.
1990, Summer	Evans, D. (Project director-1.1), Informative, supportive, real: Educational videotapes for new parents of children with spina bifida (brochure). Contact: D. Evans, Dept. of Sociology, 716 Fraser Hall, University of Kansas, Lawrence, KS 66045.
1990, Fall	Thompson, B., Wegner, J., Wickham, D., Shanks, P., Reinertson, B., Mulligan Ault, M. Circles of Inclusion: A Handbook for Planning and Implementing the Integration of Young Children with Severe Disabilities into Mainstream Montessori Preschool and Child Care Programs (Project 2.2). Contact: B. Thompson, Dept. of Special Education, 3001 Dole Center, University of Kansas, Lawrence, KS 66045.
1990, Fall	Connell, M.C. (KECRI Trainee), & Carta, J.J. (1990). Promoting transfer of academic support skills in mainstreaming through recruitment of contingent praise training in students with behavioral disabilities. Student-initiated grant funded by the Office of Special Education and Rehabilitation Services, Washington, D.C. Contact: Marlene Eliott or J. Carta, Juniper Gardens Children's Project, 1614 Washington Blvd., Kansas City, KS 66102.
1990, Fall	Sergeant, J.F., Morningstar, M.E., & Bateman, D.F. (Eds.). Resources: Life after high school for students with moderate and severe disabilities. Contact: Beach Center on Families and Disability, The University of Kansas, 1990, Lawrence, KS. (Manual/guide).
1990-91, Winter	Roy, C.R. (Ed.), Transitions, Newsletter of the Kansas Early Childhood Research Institute, Vol. 2, No. 1. Contact: KECRI Dissemination, 1082 Dole Center, University of Kansas, Lawrence, KS 66045.
1991	Thompson, B., & Wegner, J. (Project directors-2.2), Reference list on integration of children with severe disabilities into integrated preschools; and ethnographic research methods. Contact: B. Thompson, Dept. of Special Education, 3001 Dole Center, University of Kansas, Lawrence, KS 66045.
1991	Thompson, B., & Wegner, J. (Project directors-2.2), Annotated bibliography on integration of children with severe disabilities into integrated preschools; and ethnographic research methods. Contact: B. Thompson, Dept. of Special Education, 3001 Dole Center, University of Kansas, Lawrence, KS 66045.
1991, Spring	McCluskey-Fawcett, K., & O'Brien, M. (Project Directors-1.3). Learning to Care for Your NICU BABY. Fifteen-minute videotape for parents in the NICU to help the transition from hospital to home. To be distributed late 1994 through Paul H. Brookes Publishing Co., Baltimore, MD.
1991, Spring	McCluskey-Fawcett, K., & O'Brien, M. (Project Directors-1.3). An Introduction to the NICU. Thirteen-minute videotape produced at KUMC, developed to help prepare parents and other visitors for their initial visits to the NICU. To be released late 1994 through Paul H. Brookes Publishing Co., Baltimore, MD.
1991, Spring	Weinberg, A. (Master's thesis of KECRI Project 2.3 trainee), Construct validity of the speech and language assessment scale: A tool for recording parents judgments. Available through Watson Library, University of Kansas, Lawrence.
1991, Spring	Schooling, T. (Master's thesis of KECRI Project 2.3 trainee), Preschool speech intelligibility measure (PSIM): An assessment of reliability. Available through Watson Library, University of Kansas, Lawrence.

DATE	MATERIALS
1991, July	Atwater, J.B., Carta, J.C., Schwartz, I.S., ACCESS: Assessment Code/Checklist for Evaluating Survival Skills Observation Manual. (J. Carta & C. Greenwood, Project directors-3.1). (Assessment instrument.) Contact: Marlene Eliott or J. Carta, Juniper Gardens Children's Project, 1614 Washington Blvd., Kansas City, KS 66102.
1991	Alexander, A. L. (Master's thesis of KECRI Project 2.3 trainee), Kindergarten teachers' impressions of children with communication handicaps. Available through Watson Library, University of Kansas, Lawrence, KS.
1991	Connell, M.C. (Master's thesis of KECRI Project 3.1 trainee), Programming generalization of in-class transition skills by teaching preschoolers with developmental delays to recruit contingent classroom teacher praise. Available through Watson Library, University of Kansas, Lawrence.
1991	Thompson, B., Wegner, J., Wickham, D., Shanks, P., Reinertson, B., & Ault, M. An investigation of the transition and integration of preschoolers with severe and profound multiple disabilities into a Montessori community preschool program: Program history, features, and research activities in progress, Circle of Inclusion project. KECRI Project 2.2, KECRI Working Paper. Contact: B. Thompson, Dept. of Special Education, 3001 Dole Center, University of Kansas, Lawrence, KS 66045.
1991, Summer	Thompson, B., & Wegner, J. (Project directors-2.2). A Circle of Inclusion. Videotape showing issues in transitioning children with severe disabilities into a community preschool, from the points of view of participants (special educators, mainstream program staff including administrator and teachers, parents of children with and without disabilities, and children in the program. (Adjunct to Project 2.2 with separate funding.) KECRI Working Paper. Contact: B. Thompson, Dept. of Special Education, 3001 Dole Center, University of Kansas, Lawrence, KS 66045.
1991, Summer	Thompson, B., & Wegner, J. (Project directors-2.2). The Process of Instruction: Facilitating the Participation of Young Children with Severe Disabilities in Mainstream Montessori Preschools. Videotape showing facilitative techniques to support the instructional inclusion of a young child with severe disabilities in a mainstream (Montessori) preschool. (Adjunct to Project 2.2 with separate funding.) Contact: B. Thompson, Dept. of Special Education, 3001 Dole Center, University of Kansas, Lawrence, KS 66045.
1991, Summer	Thompson, B., & Wegner, J. (Project directors-2.2). The Process of Communication: Facilitating Interactions with Young Children with Severe Disabilities in Mainstream Early Childhood Programs. Videotape showing facilitative techniques in a mainstream preschool to support child-child interactions that include young children with severe disabilities. (Adjunct to Project 2.2 with separate funding.) Contact: B. Thompson, Dept. of Special Education, 3001 Dole Center, University of Kansas, Lawrence, KS 66045.
1991, Summer	Thompson, B., & Wegner, J. (Project directors-2.2). Initiating Early Childhood Mainstream Programming for Young Children with Severe Disabilities: A checklist for Considering and Planning Start Up Activities. Checklist to guide an integrated program to attend to 10 components identified as critical to successful transition into the program (Assessment instruments). Contact: B. Thompson, Dept. of Special Education, 3001 Dole Center, University of Kansas, Lawrence, KS 66045.
1991, Summer	Thompson, B., & Wegner, J. (Project directors-2.2). Facilitating the Integration of Young Children with Severe Disabilities in Mainstream Early Childhood Programs: A Checklist for Considering and Planning Content and Activities for Training Personnel. Checklist to guide planning training of personnel who will be involved in facilitating the integration of a child with severe disabilities in a mainstream early childhood program (Assessment instruments). Contact: B. Thompson, Dept. of Special Education, 3001 Dole Center, University of Kansas, Lawrence, KS 66045.
1991, October	Haymes, L., Fowler, S., & Cooper, A. Assessing the transition and adjustment of preschoolers with special needs to an integrated program. KECRI Project 2.1, KECRI Working Paper. Contact: S. Fowler, Dept. of Special Education, 1310 South 6th St., 288 Education, University of Illinois, Champaign, IL 61820.

DATE	MATERIALS
1991, November	McCluskey-Fawcett, K., & O'Brien, M. (Project directors-1.3), Reference list on transition from the NICU to home for high-risk infants and parents. Contact: M. O'Brien, HDFL, 4001 Dole Center, University of Kansas, Lawrence, KS 66045.
1991, November	McCluskey-Fawcett, K., & O'Brien, M. (Project directors-1.3), Annotated bibliography on prematurity and caretaking casualty. Contact: M. O'Brien, HDFL, 4001 Dole Center, University of Kansas, Lawrence, KS 66045.
1991, December	Thompson, B., & Wagner, J. (Project directors-2.2). The Circles of Inclusion Project: IEP Observational Matrix (Version 2.1). A matrix developed to plan for and measure implementation of IEP objectives in an integrated setting; allows for recording of the child's positioning to participate in the activity, who initiated the activity, skills identified on the IEP, and activities occurring in a Montessori program (Observation instrument). Contact: Learner Managed Designs, Inc., 2201-K West 25th Street, Lawrence, KS 66047.
1991, Winter	Roy, C.R. (Ed.), Transitions, Newsletter of the Kansas Early Childhood Research Institute, Vol. 2, No. 2. M.L. Rice & M. O'Brien (Project investigators). Contact: KECRI Dissemination, 1082 Dole Center, University of Kansas, Lawrence, KS 66045.
1992	Carta, J., Elliott, M., Orth-Lopez, L., Scherer, H., Schwartz, I., Atwater, J. (1992). Effective Instrument Strategies to Facilitate In-class Transitions and Group Instruction and Independence Performance Activities (2nd ed.). Contact: Marlene Elliott, Juniper Gardens Children's Project, 1614 Washington Blvd., Kansas City, KS 66102.
1992	Sideridis, G.D. (Master's thesis, KECRI Project 3.1 trainee). Attitudes of Kansas elementary physical and music educators towards integrating disabled students in the regular classroom. Available through Watson Library, University of Kansas, Lawrence.
1989, Rev. 1992	Wilcox, K.A., Siren, K.A., & Morris, S.R. SPLH 261/761 — Survey of Communication Disorders, Independent Study Course, Office of Continuing Education, University of Kansas.
1992, January	Thompson, B., & Wagner, J. (Project directors-2.2). CEVIT: Coding Environmental Variables and Interactions on Tape (Version 2.1). Coding system for documenting selected environmental variables and interactions occurring in preschool environments in which children with severe disabilities are present; developed for data collection from videotaped preschool activities (Observation instrument). Contact: B. Thompson, Dept. of Special Education, University of Kansas, Lawrence, KS 66045.
1992, Spring	McCluskey-Fawcett, K., & O'Brien, M. (Project directors-1.3). An Introduction to the NICU. Videotape produced at Stormont-Vail Regional Medical Hospital (Topeka, KS). Newborn Transition Project, KECRI. To be distributed late 1994 through Paul H. Brookes Publishing Co., Baltimore, MD.
1992, March	McCluskey-Fawcett, K., & O'Brien, M. (Project directors-1.3), Reference list on production, use and evaluation of videotapes in working with children and families. Newborn Transition Project, KECRI, Life Span Institute, University of Kansas.
1992, June	Sheikh, L., O'Brien, M., & McCluskey-Fawcett, K. Parent preparation for the NICU-to-home transition: Staff and parent perceptions. KECRI Project 1.3, KECRI Working Paper. Contact: M. O'Brien, HDFL, 4001 Dole Center, University of Kansas, Lawrence, KS 66045.
1992, September	Roy, C.R. (Ed.), Kansas Early Childhood Research Institute brochure (M. L. Rice & M. O'Brien, Project investigators). Contact: KECRI Dissemination, 1082 Dole Center, University of Kansas, Lawrence, KS.
1993	Rice, M.L., Watkins, R.V., Buhr, J., & Schuele, C.M. Language development. Independent Study Course, Continuing Education, University of Kansas, Lawrence, KS 66045.

DATE	MATERIALS
1993	Gertner, B.L. (Master's thesis, KECRI graduate trainee for Project 2.3). Who do you want to play with? The influence of communicative competence on peer preferences in preschoolers. Available through Watson Library, University of Kansas, Lawrence, KS 66045.
1993, Spring	Roy, C. R. (Ed.), Transitions, Newsletter of the Kansas Early Childhood Research Institute, Vol. 3, No. 1. M. L. Rice & M. O'Brien (Project investigators). Contact: KECRI Dissemination, 1082 Dole Center, University of Kansas, Lawrence, KS 66045.
1993, Spring	O'Brien, M., McCluskey-Fawcett, K., Garland-Schwering, B., Giusti, L., & Soliday, E. First Days: A notebook for parents of infants receiving care in the NICU (parent manual). Newborn Transition Project, KECRI. Available late 1994 through Paul H. Brookes Publishing Co., Baltimore, MD.
1993, Spring	O'Brien, M., McCluskey-Fawcett, K. Garland-Schwering, B., Giusti, L., & Soliday, E. First Days: Videotapes and family guide for parents in the NICU (professional manual). Newborn Transition Project, KECRI. Available late 1994 through Paul H. Brookes Publishing Co., Baltimore, MD.
1993, February	Hadley, P.A., Rice, M.L., & Wilcox, K.A. Teacher expectations in preschool and kindergarten. KECRI Project 2.3, KECRI Working Paper. Contact: M. L. Rice, Child Language Program, 1082 Dole Center, University of Kansas, Lawrence, KS 66045.
1993, September	Dunn, W. Analysis of the preschool Individualized Education Planning process: Current practices and directions for the future. KECRI Project 4.2, KECRI Working Paper. Contact: W. Dunn, Occupational Therapy Education, 4013 Hinch Hall, KU Medical Center, Lawrence, KS, 66160-7602.
1993, September	Rice, M.L., & O'Brien, M. (Project directors-5.0), Reference list on developmental outcomes for graduates of the neonatal intensive care unit. Contact: KECRI Dissemination, 1082 Dole Center, University of Kansas, Lawrence, KS 66045.
1993, September	Meck, N.E., Fowler, S., Ashworth, J.K., Bishop, M.M., Rasmussen, L.B., Thomas, M.K., O'Brien, A., & Claflin, K.S. A manual for using the NICU Individualized Transition Planner: A structured process to facilitate the transition from NICU to home. Unpublished manual. Contact: N. Meck, 130 Child Development Unit, KU Medical Center, 3901 Rainbow Blvd., Kansas City, KS, 66160-7340.
1993, September	Meck, N.E. NICU Individualized Transition Planner. Instrument (KECRI Project 1.2). Contact: N. Meck, 130 Child Development Unit, KU Medical Center, 3901 Rainbow Blvd., Kansas City, KS, 66160-7340.
1993, September	Meck, N.E. NICU Individualized Transition Planner: A structure process to facilitate the transition from NICU-to-home. Brochure (KECRI Project 1.2). Contact: N. Meck, 130 Child Development Unit, KU Medical Center, 3901 Rainbow Blvd., Kansas City, KS, 66160-7340.
1993, September	Meck, N.E. Retrospective Transition Interview (RTI) - Needs Assessment. Instrument (KECRI Project 1.2). Contact: N. Meck, 130 Child Development Unit, KU Medical Center, 3901 Rainbow Blvd., Kansas City, KS, 66160-7430.
1993, September	Meck, N.E. NICU Evaluation - Formative Evaluation Instrument/Survey. Instrument (KECRI Project 1.2). Contact: N. Meck, 130 Child Development Unit, KU Medical Center, 3901 Rainbow Blvd., Kansas City, KS, 66160-7430.

BEST COPY AVAILABLE

PRESENTATIONS AT PROFESSIONAL MEETINGS

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
10/13/88	Facilitating transition from the hospital to community based programs	Meck, N.	Butte, Montana	25
10/14/88	The assessment and evaluation of the at-risk infant	Meck, N.	Butte, Montana	60
10/18/88	Challenges facing survivors of neonatal intensive care and their families	Evans, D.B., Barber, P.B.	Invited presentation for 24th Annual Postgraduate Symposium on Medicine and Religion; University of Kansas Medical Center	500-600
11/10/88	Defining dyslexia as a developmental language disorder	Catts, H.	Annual Meeting of the Orton Dyslexia Society, Tampa, Florida	--
11/14/88	Getting a closer look at early intervention classrooms through ecobehavioral assessment	Carta, J.	International Early Childhood Conference on Children with Special Needs; Nashville, Tennessee	125
11/18/88	Use of the Kaufman Assessment Battery for children (K-ABC) with language-impaired or ESL children	Kelly, R.J., Rice, M.L., Wilcox, K.A.	American Speech-Language Hearing Association Convention; Boston, Massachusetts	45
11/18/88	Preschool children's acquisition of verb particles	Wegner, J., Rice, M.L.	American Speech-Language Hearing Association Convention; Boston, MA	25
11/20/88	The LAP Social Interactive Coding System	Rice, M.L., Sell, M.A., Hadley, P.A., Wilcox, K.A.	American Speech-Language Hearing Association Convention; Boston, MA	100
11/20/88	Influence of phonetic and visual factors in learning to read	Mauer, D. Kamhi, A. Catts, H.	1988 Annual Convention, American Speech-Language Hearing Association, Boston, MA	--
11/21/88	Language-impaired children's acquisition of negation	Buhr, J.C., Rice, M.L.	American Speech-Language-Hearing Association Convention; Boston, MA	25
11/21/88	Dysarthria of amyotrophic lateral sclerosis: Clinical judgments of severity	Seikel, J.S., Wilcox, K.A., Davis, J.	American Speech-Language-Hearing Assn. Convention, Boston, MA	25
12/88	Role of related service in preschool and school aged programs	Dunn, W.	TASH; Washington, D.C.	65
2/17/89	Partners in transition	Hazel, R.	Topeka Association for Retarded Citizens; Topeka, KS	--

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
4/7/89	Special education students in regular education classrooms/classwide peer tutoring/adaptive learning environments	Carta, J. (session leader)	Council for Exceptional Children, San Francisco, CA	--
4/13/89	The psychological impact of disability and illness on medical treatment decision-making	Evans, D.B.	National Meetings of the National Legal Center for the Medically Dependent and Disabled; Washington, D.C.	--
4/17/89	A comparison of service provision patterns in occupational therapy	Dunn, W.	AOTA Conference; Baltimore, MD	200
4/17/89	Managing OT in rural education	Dunn, W.	AOTA Conference; Baltimore, MD	80
4/17/89	The application of uniform terminology to practice	Dunn, W.	AOTA Conference; Baltimore, MD	80
4/28/89	Temporal auditory processing abilities in learning disabled children	Whites, M.M., Wilcox, K.A.	Society for Research in Child Development, Kansas City, MO	100
4/28/89	Social interactions of speech & language impaired children	Sell, M.A., Hadley, P.A., Rice, M.L.	Society for Research in Child Development, Kansas City, MO	--
4/28/89	Language-impaired children's fast mapping abilities	Rice, M.L., Buhr, J., Nemeth, M.	Society for Research in Child Development, Kansas City, MO	--
4/28/89	Decision-making paradigms for service providers	Dunn, W.	Infant symposium, Akron, OH	80
4/89	Maternal speech: Adolescent and older mother comparison	Culp, A.M., O'Brien, M.	Society for Research in Child Development, Kansas City, MO	--
4/89	Construction play and visual-spatial abilities	Caldera, Y.M., O'Brien, M., Trugilio, R., Alvarez, M., Huston, A.C.	Society for Research in Child Development, Kansas City, MO	--
4/89	Stressors and support systems of adolescent mothers	McCluskey-Fawcett, K., Unruh, E.	Biennial Meeting of the Society for Child Development, Kansas City, MO	--

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
5/25/89	Sampling alternatives: How to collect data on more subjects with fewer observers	Schulte, D.	Association for Behavior Analysis Annual Convention, Milwaukee, WI	--
5/25-27/89	A two-setting visual memory training with self-produced auditory stimuli by a developmentally delayed child	Duarte, A., Orth-Lopes, L., Eikeseth, S., Etzel, B.C.	Association for Behavior Analysis Annual Convention, Milwaukee, WI	--
5/26/89	Social validity assessments: Is current practice state of the art?	Schwartz, I.S.	Association for Behavior Analysis Annual Convention, Milwaukee, WI	--
5/27/89	Relationships between ecology and behavior in intervention classrooms for toddlers	Atwater, J., Welge, P., Bastien, M.	Association for Behavior Analysis Annual Convention, Milwaukee, WI	--
6/2-3/89	Therapists in early intervention in school settings: Present challenges and future possibilities	Dunn, W.	E.V.A. System Buffalo, NY	--
6/26/89	The transition between early intervention and preschool programs: Policy and administrative issues	Fowler, S.A.	Partnerships for Progress III Conference, Washington, DC	--
6/25/89	From the neonatal nursery to the elementary schools: Transitions for children with handicaps and their families	O'Brien, M., Fowler, .S.A., Hazel, R.A., Liebhaber, G.	Partnership for Progress III Conference, Washington, DC	--
7/15/89	Fidelity of treatment	Carta, J.J.	Annual Project Directors' Meeting, Washington, DC	30
7/27/89	Preparing for the transition from early childhood programs to elementary school	Fowler, S.A.	CDR Summer Institute Series, Williamsburg, VA	--
7/30/89	A new direction for speech therapy in the United States	Rice, M.L.	Japanese Association of Speech, Language, & Hearing, Department of Linguistics, Sophia University, Tokyo, Japan	--
7/89	Invited presentation. Television's possible contributions to young children's language development	Rice, M.L.	NHK Research Team, Tokyo, Japan	--

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
8/3/89	Early childhood special education: A view of our achievements and a preview of our challenges	Fowler, S.A.	Project Sunrise Institute Wrightsville Beach, NC	--
8/4/89	Keynote address	Fowler, S.A.	Project Sunrise Institute Wrightsville Beach, NC	--
8/10/89	Moving from early intervention programs to preschool programs: Smooth transitions for families, children, & staff	Fowler, S.A.	CDR Summer Institute Series, Denver, CO	--
8/89	Affect to action: Sexuality education in the day of AIDS	Irving, L., Frost, H.L., McCluskey-Fawcett, K.	Annual Convention, American Psychiatric Association, New Orleans, LA	--
9/11/89	language development: Its importance in the preschool years	Cooper, A.Y.	Topeka Association for the Education of Young Children, Topeka, KS	--
9/21/89	Classroom management techniques to use with preschool children	Cooper, A.Y.	In-service training, Children's Learning Center, Lawrence, KS	--
9/29/89	Adjunctive therapies for respiratory distress syndrome	Claflin, K.	National Association of Neonatal Nurses, Kansas City, MO	100
10/2/89	Integrating children and youth with severe disabilities	Thompson, G.	Ann Sullivan Center, Lima, Peru	--
10/15/89	Early intervention for children in inner-city schools	Carta, J.J.	2nd Annual Conference on Developmental Disabilities, Minnetonka, MN	150
10/21/89	Help! Are some behavior management skills needed here?	Cooper, A.Y., Haymes, L.K.	Annual Conference of the Kansas Association for the Education of Young Children, Great Bend, KS	75
10/23/89	Ecobehavioral assessment of children's classroom skills	Atwater, J.B., Carta, J.J., Schwartz, I.S., Trissel, D., Rinkel, P., Connel, M., Dougherty, J.	International Early childhood Conference on Children With Special Needs, CEC/DEC, Minneapolis, MN	--

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
10/23/89	From the neonatal nursery to elementary schools: Transitions for children with handicaps and their families	Fowler, S., O'Brien, M., Rice, M.L., Hazel, R., Hamilton, J.	International Early Childhood Conference on Children with Special Needs, CEC/DEC, Minneapolis, MN	
10/23/89	Getting ready for kindergarten: Assessment and intervention strategies for promoting survival in regular classroom settings	Carta, J.J., Schwartz, I.S., Atwater, J.B., Trissel, D., Rinkel, P., Connell, M.	International Early Childhood Conference on Children With Special Needs, CEC/DEC, Minneapolis, MN	100
10/23/89	Phonetic versus orthographic transcription: What is needed?	Siren, K.A., Wilcox, K.A.	Kansas Speech-Language-Hearing Association, Lawrence, KS	25
10/23/89	Language Acquisition Preschool: Implementing therapy within a classroom setting	Rice, M.L., Wilcox, K.A., Bunce, B.H.	International Early Childhood Conference on Children with Special Needs, CEC/DEC, Minneapolis, MN	150
10/27/89	Case studies in augmentative and alternative communication	Wegner, J., Keating, M., Molineaux, B.	Annual Convention of the Kansas Speech-Language-Hearing Association	30
10/27/89	LAP: A model preschool for language disordered and ESL children	Rice, M.L., Wilcox, K.A., Bunce, B.H., Liebhaber, G.K.	Kansas Speech-Language-Hearing Association, Lawrence, KS	70
10/28/89	Predicting reading success in language-impaired children	Catts, H., Swank, L., Mcintosh, S., Stewart, L.	Kansas Speech-Language-Hearing Association Annual Meeting, Lawrence, KS	--
10/89	Testimony re: P.L. 99-457	Fowler, S.A.	Early childhood hearing before the Division for Early Childhood Conference, Minneapolis, MN	--
10/89	The transition between early intervention and preschool programs: Policy and administrative issues	Fowler, S.A.	Annual Division for Early Childhood Conference, Minneapolis, MN	--
11/17/89	Language impaired preschool children's social interactions	Sell, M.A., Hadley, P.A., Rice, M.L.	American Speech-Language-Hearing Association, St. Louis, MO	400

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
11/17/89	Language sampling pictures: Sequenced pictures vs. video	Roudebush, C.R., Rice, M.L.	American Speech-Language-Hearing Association, St. Louis, MO	400
11/17/89	Verb particle acquisition in language-impaired and normally developing children	Watkins, R.V., Rice, M.L.	American Speech-Language-Hearing Association, St. Louis, MO	400
11/17/89	Language learning disabilities: A case conference	Newhoff, M., Catts, H., Miller, L., Hippold, M., Rice, M. L., Wallach, G.	American Speech-Language Hearing Association, St. Louis, MO	400
11/17/89	Language assessment in the public schools: What would you do?	Brinton, B., Fey, M., Gallagher, T., Muma, J., Rice, M.L.	American Speech-Language-Hearing Association, St. Louis, MO	400
11/17/89	Utilization of innovative applications of assistive technology for children and youth with severe disabilities	Thompson, B.	Baltimore OSERS Project Directors Meeting for Programs for Severely Handicapped Students	20
11/18/89	Influence of phonetic and visual factors in learning to read	Mauer, D., Kamhi, A., Catts, H.	Annual meeting of the American Speech-Language-Hearing Association, Boston, MA	--
11/19/89	Miniseminar. Language therapy within a preschool classroom setting: Implementation and supervision	Bunce, B.H., Watkins, R.H.	American Speech-Language-Hearing Association, St. Louis, MO	400
11/20/89	A comparison of phonetic and orthographic transcription methods	Siren, K.A., Wilcox, K.A.	American Speech-Language-Hearing Association, St. Louis, MO	25
11/20/89	Miniseminar. Identification and remediation of early reading problems	Catts, H., Kamhi, A.	American Speech-Language-Hearing Association, St. Louis, MO	--
11/21/89	Naming deficits in poor readers: Influences of speech programming ability	Mauer, D., Kamhi, A., Catts, H.	American Speech-Language-Hearing Association, St. Louis, MO	--
11/21/89	Precursors of reading disabilities in language-impaired children	Catts, H., Swank, L., McIntosh, S., Stewart, L.	American Speech-Language-Hearing Association, St. Louis, MO	--
11/89	Pragmatic skills of adults with mental retardation: A sociolinguistic investigation	Oetting, J.B, Rice, M.L.	American Speech-Language-Hearing National Meeting, St. Louis, MO	--

BEST COPY AVAILABLE

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
11/89	Educational effects of "Sesame Street" home videos	Rice, M.L.	Sesame Street Research Symposium, Princeton, NJ	--
11/89	Transitions across the life span	Fowler, S.A.	Keynote address to the Middle Tennessee Association for Severely Handicapped, Nashville, TN	--
11/89	Keynote address. Wyoming and P.L. 99-457	Fowler, S.A.	Wyoming Early Childhood Education Meeting for LEAs and Department of Community Programs, Laramie, WY	--
12/7/89	Transition and integration of young children with severe and profound disabilities into a community Montessori preschool program	Thompson, B., Wegner, J., Wickham, D.	International Conference of the Association for Persons with Sever Handicaps (TASH), San Francisco, CA	40
12/7/89	Poster. Advanced applications of the adaptive Firmware Card for developing functional applications of microcomputer technology for students with severe disabilities	Thompson, B., Hays, J.	TASH, San Francisco, CA	100
12/12/89	Research Institute panel	Rice, M.L., Als, H., Bailey, D., Gallagher, J., Strain, P.	NEC*TAS Project Directors Meeting, Washington, DC	80
12/12/89	Communication handicaps: How children transition to kindergarten	Rice, M.L., Hadley, P.A.	NEC*TAS Project Directors Meeting, Washington, DC	12
12/89	Consultation as a therapeutic strategy	Dunn, W.	TASH, San Francisco, CA	30
12/89	Therapy services in educational settings: Guidelines from professional organizations	Dunn, W.	TASH, San Francisco, CA	40
1/12/90	Results and impact of a three-year state-wide personnel training inservice project: Functional applications of microcomputer technology for students with severe disabilities	Thompson, B., Hays, J.	Lexington, KY	25
1/90	Application of sensory integrative principles within functional assessment and intervention	Dunn, W.	Franklin County Board of Mental Retardation & Developmental Disabilities, Columbus, OH	60

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
2/1/90	Prevention of Developmental Disabilities in the Context of P.L. 99-457	Hollowell, J.	Division of Birth Defects and Developmental Disabilities, Center for Disease Control, Atlanta, GA	--
2/7/90	Facilitating transitions from the NICU to home	Meck, N., Dinas, P., Merrill-Stekskal, A., Satterfield, A., Miner, A.	University of Kansas Medical Center, Kansas City, KS	18
2/14/90	P.L. 99-457 and early intervention	Meck, N., Heitman, R.	Bethany Hospital, Kansas City, KS	26
2/90	Transitions during early childhood	Fowler, S.A.	Dept. of Child Development & Family Studies, Purdue University, West Lafayette, IN	--
2/90	Keynote address. Creating, designing, and implementing effective interventions in school settings	Dunn, W.	TIES (Therapy in Educational Settings), Eugene, OR	100
2/90	Current issues in providing related services in the schools	Dunn, W.	Workshop on critical issues for Occupational Therapists in the school system, Phoenix, AZ	50
2/90	Current issues in providing related services in the schools	Dunn, W.	East Metro Special Education Coalition, St. Paul, MN	150
2/90	Blending NDT and sensory integration	Dunn, W.	Detroit Institute for Children, Detroit, MI	100
3/14/90	Relationships of University Affiliated Programs to State Title V agencies	Hollowell, J.	Directors of MCH and training programs, Washington, DC	200
3/16/90	Conversational responsiveness of speech and language delayed preschoolers	Hadley, P.A., Rice, M.L.	Southwestern Society for Research in Human Development	25
3/25/90	Dyslexia: A language disability	Catts, H.	New York Orton Dyslexia Society Annual Convention	400
3/30/90	Sue is acting up again! Dealing with problem behaviors	Cooper, A., Haymes, L.	Midwest Association for the Education of Young Children Annual Conference, Kansas City, MO	--

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
3/30/90	The transition of at risk and handicapped preschool children from home to school	Cooper, A., Haymes, L.	Midwest Association for the Education of Young children Annual Conference, Kansas City, MO	--
3/90	Colloquium. Peer-mediated interventions	Fowler, S.A.	Dept. of Special Education, University of Illinois, Champagne, IL	25
3/90	Invited presentation. Teaching toddlers: A child-centered program model	O'Brien, M.	Kansas Division for Early Childhood, Council for Exceptional Children, Wichita, KS	--
3/90	Therapy services in early childhood programs: Making effective service provision decisions	Dunn, W.	Kansas Division for Early Childhood, Council for Exceptional Children, Wichita, KS	200
3/90	Sensory integration and NDT: An integrated approach	Dunn, W.	Easter Seal Society for Children, Dallas, TX	200
3/90	Praxis and its dysfunction	Dunn, W.	Rosalie Dold Symposium, Oak Brook, IL	150
3/90	Arousal, attention, and processing	Dunn, W.	Rosalie Dold Symposium, Oak Brook, IL	150
3/90	The status of transition planning in Kansas	Fowler, S.A., Rosenkoetter, S.E.	Kansas Division of Early Childhood Conference, Wichita, KS	75
3/90	Juniper Gardens Children's Project Early Childhood research projects	Carta, J.J., Atwater, J.B., Schwartz, I.S.	DHHS Conference on Families and Communities at Risk, Kansas City, MO	--
4/90	Transitions in Early Childhood Symposium	Fowler, S.A., (discussant)	CEC Annual Conference, Toronto, Canada	--
4/90	Ecobehavioral assessment as a methodology for describing risk for academic failure	Carta, J.J.	American Educational Research Association, Boston, MA	--
4/90	Preverbal object concepts and early language learning	Caldera, Y.M., O'Brien, M.	International Society for Infant Studies, Montreal, Canada	--
4/90	Placement variability in intraoral pressure	Wilcox, K.A., Seikel, J.A.	Acoustical Society of America, University Park	50
4/90	Federal and State progress in implementing Part H	Fowler, S.A.	Kansas Coordinating Council for Early Intervention Services	--

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
4/90	Colloquium. Early Childhood Transitions in Kansas	Fowler, S.A.	Dept. of Human Development and Family Life, University of Kansas	--
4/90	Introductory seminar in using neurodevelopmental treatment (NDT) with children with multiple disabilities including multisensory impairments	Dunn, W.	Child Study Center, Oklahoma City, OK	100
4/90	Issues in parent-professional collaboration in early intervention	Dunn, W.	American Occupational Therapy Assn. Annual Conference, New Orleans, LA	60
4/90	The application of uniform terminology to practice	Dunn, W.	AOTA Annual Conference, New Orleans, LA	60
5/28/90	The use of response cost and teacher attention for the maintenance of cooperative contact with peers and the reduction of aggressive behaviors in a preschooler	Haymes, L.I, Cooper, A.Y., Etzel, B.C.	ABA, Nashville, TN	--
5/29/90	Programming a successful transition from home to preschool	Cooper, A.Y., Haymes, L., Fowler, S.A.	ABA, Nashville, TN	--

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
5/29/90	Behavioral assessment in transition planning for young children with disabilities	Schwartz, I.S., (symposium chair) Suarez de Balczar, Y., Fawcett, S., Cooper, A.Y., Haymes, L., Fowler, S.A., Etzel, B., Alai-Rosales, S., Atwater, J., Duarte, A., Orth-Lopes, L., Potucek, J., LeBlanc, J., Carta, J.J.	ABA, Nashville, TN	--
2/90 - 5/90	Early Childhood Task Force Report re: development and provision of pre-kindergarten programs for children who are considered at risk for educational failure	Fowler, S.A. (co-chair)	Lawrence Public Schools (USD 497), Lawrence, KS	--
5/90	Challenges for early childhood professionals in 1990	Fowler, S.A.	Oklahoma State Early Childhood Conference, Oklahoma City, OK	--
5/90	Transition from preschool to kindergarten	Fowler, S.A.	Family Infant Preschool Programs' Annual Conference, Morganton, NC	--
5/90	Social interaction intervention packages	Fowler, S.A. (discussant)	Assn. for Behavior Analysis Conference, Nashville, TN	--
5/90	Transitioning children from the NICU to the community	Meck, N., Claflin, K., Rasmussen, L., Gelpi, T.	Assn. for the Care of Children's Health, Washington, DC	50
5/90	Ecobehavioral assessment of children's survival skills in preschool and primary grade classrooms	Atwater, J.B., Carta, J.J., Schwartz, I.S.	Assn. for Behavior analysis (ABA) 16th Annual Convention, Nashville, TN	--
5/90	Panel discussion. Social validity assessment: Issues affecting its use in applied research	Blanchard, K., Baer, D.M., Fawcett, S.B., Fuqua, R.W., Geller, E.S., Hawkins, R.P., Schwartz, I.S.	ABA, Nashville, TN	--

BEST COPY AVAILABLE

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
5/90	Applications of ecobehavioral analysis in settings for young children	Carta, J.J. (symposium chair) Greenwood, C.R. (discussant)	ABA, Nashville, TN	40
5/90	The effects of teaching preschoolers with developmental delays to recruit teacher praise on generalization on in-class transition skills	Connell, M.C., Carta, J.J.	ABA, Nashville, TN	50
5/90	Qualitative analyses of small groups as teaching formats for students with autism and developmental disabilities: Language applications	Dugan, E., Kamps, D.M., Schwartz, I.S.	ABA, Nashville, TN	--
5/90	Large scale dissemination of peer mediated intervention procedures: issues, procedures, and results	Greenwood, C.R. (symposium chair)	ABA, Nashville, TN	--
5/90	Out of the lab and into the neighborhood: R. Vance Hall's influence on innovative applications of behavior analysis in schools and the community	Greenwood, C.R. (panel)	ABA, Nashville, TN	--
5/90	Peer mediated social interaction strategies: Recent applications and novel approaches	Greenwood, C.R. (discussant)	ABA, Nashville, TN	--
5/90	Staff interventions	Schwartz, I.S. (symposium chair)	ABA, Nashville, TN	--
5/90	Behavioral assessment in transition planning for young children with disabilities (paper)	Schwartz, I.S., Atwater, J.B., Carta, J.J.	ABA, Nashville, TN	40
5/90	An ecobehavioral system to assess classroom survival skills	Schwartz, I.S., Atwater, J.B., Carta, J.J.	ABA, Nashville, TN	40
5/90	A computerized teacher advisor for evaluating student progress and solving implementation problems	Terry, B., Greenwood, C.R., Finney, R.	ABA, Nashville, TN	--

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
5/90	Ecobehavioral assessment in the identification of risk factors: A longitudinal investigation	Walker, D., Hart, B., Carta, J.J.	ABA, Nashville, TN	--
6/90	"Don't talk to him: He's weird": The role of language in early social interactions	Rice, M.L.	National Institute of Child Health and Human Development Conference, "The Social Use of Language: Pathways to success", Vanderbilt University, Nashville, TN	--
6/90	Changing dreams, building hope: Family needs of infants with spina bifida	Metzger, L.K.	Society for Disability Studies Annual Conference, Washington, DC	--
6/90	Showing and critique of videotape, "Josh's Birthday"	Evans, D., Corum, E., Metzger, L.K.	Project 1.1 Advisory Board	--
6/90	Guidelines for occupational therapy intervention with high-risk students	Dunn, W.	Iowa Dept. of Education, Storm Lake, IA	30
7/90	Limited lexical acquisition processes of specific-language-impaired children	Rice, M.L.	Fifth International Congress for the Study of Child Language, Budapest, Hungary	--
8/28/90	Integration of young children with severe and profound multiple disabilities into a community Montessori preschool program	Wickham, D.	Columbia, MO	--
8/90	Early intervention services	Dunn, W.	Infant Project, American Speech-Language-Hearing Association, Rockville, MD	40
9/90	Clinical decision making	Dunn, W.	Children's Seashore House, Philadelphia, PA	200
9/90	Perceptual evaluation and treatment toward independent living	Dunn, W.	Woodrow Wilson Rehabilitation Center, Fishersville, VA	35
10/22/90	Paper session. Families and children in transition: The FACT Study	O'Brien, M., Thiele, J.E., Robinson, M.P.	Council for Exceptional Children/Division for Early Childhood's 6th International Early Childhood Conference on Children with Special Needs, Albuquerque, NM	--

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
10/30/90	Family involvement through an IFSP	Thiele, J.E., MacPherson, B., Webster, T.	1990 Kansas Association of Rehabilitation Facilities, Manhattan, KS	--
10/31/90	Invited symposium. Dyslexia: A developmental language perspective	Catts, H.	Annual Conference on the Orton Dyslexia Society, Washington, DC	--
10/90	Procedural reliability: A vital component for ensuring the quality of early intervention programs	Carta, J.J., Atwater, J.B., Schwartz, I.S.	CEC/DEC 6th International Early Childhood Conference on Children with Special Needs, Albuquerque, NM	30
10/90	Early childhood classroom survival skills project: Results from kindergarten and first grade follow-up	Schwartz, I.S., Carta, J.J., Atwater, J.B., Trissel, D., Rinkel, P., Connell, M.	CEC/DEC 6th International Early Childhood Conference on Children with Special Needs, Albuquerque, NM	100
10/90	Facilitating effective services for young children and their families	Dunn, W.	Texas Occupational Therapy Association, Galveston, TX	70
10/90	Poster session. LAP Update: Effectiveness of intervention within a classroom setting	Bunce, B.H., Rice, M.L., Wilcox, K.A.	Kansas Speech Language Hearing Conference, Wichita, KS	100
10/90	Specific language impaired preschoolers' verbal interactions with their peers	Rice, M.L.	School of Human Communication Disorders, McGill University, Montreal, Canada	--
10/90	Attentional mechanism which support cognitive, affective, and sensorimotor performance	Dunn, W.	KS Occupational Therapy Association, Kansas City, MO	50
10/90	Service provision models	Dunn, W.	KS Occupational Therapy Association, Kansas City, MO	50
11/16/90	Children's Quick Incidental Learning (QUIL) of words: A developmental investigation	Oetting, J.B., Rice, M.L., Swank, L.K.	American Speech-Language-Hearing Association Annual Convention, Seattle, WA	--
11/16/90	Measurement of word comprehension: Pictures vs. video	Rice, M.L., Buhr, J.C., Oetting, J.B.	American Speech-Language-Hearing Association Convention, Seattle, WA	--

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
11/16/90	The Speech and Language Assessment Scale (SLAS) Parent vs. Professional Judgements	Hadley, P.A., Rice, M.L., Wilcox, K.A.	American Speech-Language-Hearing Association Convention, Seattle, WA	50
11/16/90	Verb preference and production in three groups of preschoolers	Kelly, D.J., Rice, M.L.	American Speech-Language-Hearing Association Convention, Seattle, WA	--
11/16/90	Poster session. Conversational responsiveness in an integrated preschool setting	Hadley, P.A., Rice, M.L.	American Speech-Language-Hearing Association Convention, Seattle, WA	--
11/18/90	Quick incidental learning of words: The effect of a pause	Rice, M.L., Buhr, J.C., Oetting, J.B.	American Speech-Language-Hearing Association Convention, Seattle, WA	--
11/18/90	Poster session. Communicative interactions of children with severe disabilities	Wegner, J.R., Rice, M.L., Thompson, B.	American Speech-Language-Hearing Association Convention, Seattle, WA	--
11/19/90	Poster session. Online coding of classroom language facilitation techniques	Bunce, B.H., Stueve, J.	American Speech-Language-Hearing Association Convention, Seattle, WA	200
11/19/90	Poster session. LAP Update: Effectiveness of language intervention within a classroom setting	Bunce, B.H., Rice, M.L., Wilcox, K.A.	American Speech-Language-Hearing Association Convention, Seattle, WA	200
11/30/90	Kansas Early Childhood Research Institute — A progress report	Thiele, J.	Handicapped Children's Early Education Project — Project Directors Meeting, Washington, DC	--
11/30/90	Paper. Getting ready for kindergarten: Teaching classroom survival skills to young children with disabilities	Schwartz, I.S.	Handicapped Children's Early Education Project — Project Directors Meeting, Washington, DC	--
11/90	Word acquisition of specific language impaired children	Rice, M.L.	Neurolinguistics Laboratory, Massachusetts General Hospital, Boston, MA	--
11/90	Children's word learning strategies: Contrast and similarity	Buhr, J.C. Rice, M.L.	American Speech-Language-Hearing Association National Meeting, Seattle, WA	--

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
11/90	Occupational therapy for children with sensory motor problems: Intervention in the school system	Dunn, W.	Erinoak Hospital, Mississauga, Ontario, Canada	--
11/90	Preconference symposium paper. Dyslexia: A developmental language problem	Catts, H.	1990 Annual Conference, The Orton Dyslexia Society, Washington, D.C.	
12/8/90	Panel presentation. Delineating Critical Factors for the Meaningful Inclusion of Preschoolers with Severe/Multiple Handicapping Conditions into a Mainstream Community Montessori Preschool and Day Care Center	Thompson, B., Wagner, J., Wickham, D., Mulligan Ault, M.	Action for Inclusion: The Association for Persons with Severe Handicaps (TASH) International Conference, Chicago, IL	--
12/19/90	Are human infant cries acoustically different?	Comuzzie, D.K., O'Brien, M., Wilcox, K.A.	American Society of Zoologists annual meeting, San Antonio, TX	70
12/90	Who talks to whom? How preschoolers' language development influences their social interactions	Rice, M.L.	Harvard University Graduate School of Education, Cambridge, MA	--
12/90	How well do entry level programs prepare therapists to support inclusion?	Dunn, W.	TASH, Chicago, IL	40
1/91	Integrating neurodevelopmental treatment and sensory integration	Dunn, W.	Alberta Children's Hospital, Calgary, Alberta, Canada	80
1/91	Interdisciplinary services in early intervention	Dunn, W.	American Speech-Language-Hearing Association Meeting, San Diego, CA	40
2/91	Sensory integration and mental health	Dunn, W.	Grand Rounds of Psychiatry, University of Kansas Medical Center, Kansas City, Kansas	40
2/91	Motor control and motor learning	Dunn, W.	Dupage Easter Seals, Chicago, IL	--
3/5/91	Family and environmental antecedents of intellectual ability in early childhood: Longitudinal analyses	O'Brien, M. (discussant)	1991 Rosen Symposium on Giftedness, University of Kansas, Lawrence, KS	--

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
3/5/91	Comments on the social/cultural value of verbal competence	Rice, M.L.	1991 Rosen Symposium on Giftedness, University of Kansas, Lawrence, KS	40
3/8/91	Preparing for the integration of preschoolers with severe disabilities in to community preschools	Wickham, D.	Missouri Association for Persons with Severe Handicaps, Kansas City, KS	--
3/91	Infants/toddlers/preschoolers — State and Federal policies and regulations: What you need to know	Thiele, J.E., Peterson, N.	Kansas Division for Early Childhood Annual Conference, Kansas City, KS	--
4/20/91	Poster. The effects of classroom survival skills intervention on young children with disabilities: Results of a two-year follow-up	Carta, J.J., Atwater, J.B., Schwartz, I.S.	Biennial Meeting of the SRCD, Seattle, WA	--
4/20/91	The effect of verb content on children's initial referential selections	Kelly, D.J., Rice, M.L.	Biennial Meeting of the SRCD, Seattle, WA	--
4/20/91	Poster. Identification of risk-factors: Links between early language development and risk outcomes of young students	Walker, D., Carta, J., Greenwood, C., Hart, B., Taylor, B.	Biennial Meeting of the SRCD, Seattle, WA	--
4/91	Developmental and linguistic effects on the coarticulation of fricative-vowel productions	Siren, K.A., Wilcox, K.A.	Acoustical Society of America, Baltimore, MD	--
4/91	Invited participant/panelist.	Rice, M.L.	Harvard Graduate School of Education Working Conference on Assessment, Cambridge, MA	--
4/91	SI and NDT: Common approaches in treatment in the schools	Dunn, W.	Howard University, Washington, DC	150
4/91	Children's acquisition of verb particles and prepositions	Watkins, R.V., Rice, M.L.	Biennial meeting of the Society for Research in Child Development, Seattle, WA	--

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
4/91	Keynote address. Social consequences of language impairment: Interactions in preschool settings	Rice, M.L.	Annual Convention, Maryland Speech-Language-Hearing Association, Clinton, MD	--
4/91	Teacher's expectations of pregnant teens	McCluskey-Fawcett, K., Harney, P.A., Frost, H.	Society for Research in Child Development (SRCD) Conference, Seattle, WA	--
4/91	The role of familial stress in personality development of older adolescents from divorced and nondivorced families	Green-Bailey, P., McCluskey-Fawcett, K.	Biennial Meeting of the SRCD, Seattle, WA	--
4/91	Genderspeak at 18 months: Sex-differentiated vocabulary of toddlers and their parents	O'Brien, M., Zima, K.	Biennial Meeting of the SRCD, Seattle, WA	--
4/91	The interacting contribution of constitutional, environmental, and information processing factors to early developmental outcome	Mitchell, D.W., McCollam, K.M., Horowitz, F.D., Embretson, S.E., O'Brien, M.	Biennial Meeting of the SRCD, Seattle, WA	--
5-6/91	Verbs and verb inflection in the spontaneous language of preschool children with specific language impairment	Bode, J.V., Rice, M.L.	Symposium for Research on Child Language Disorders, Madison, WI	--
5/20/91	The role of early developmental evaluation in adoptive placement — The Special Needs Adoption Project	Hampton, J., Meck, N.E.	Annual meeting of the Great Plains Organization for Perinatal Health Care, Minneapolis, MN	--
5/24/91	A needs assessment to assist mothers of premature infants in their transition from the Neonatal Intensive Care Unit before, during, and 6 months after discharge	Fowler, S.A., Meck, N.E., Claflin, K.	Annual Convention of the Association for Behavioral Analysis (ABA), Atlanta, GA	--

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
5/25/91	Poster session. Indexing teacher initiation as one method of measuring social validity	Connell, M.C., Carta, J.J., Baer, D.M.	ABA, Atlanta, GA	--
5/25/91	Poster session. Prediction of academic behavior from early language measures	Walker, D., Hart, B., Greenwood, C., Carta, J.	ABA, Atlanta, GA	--
5/25/91	Using treatment fidelity data to examine treatment effects	Carta, J.J. (chair)	ABA, Atlanta, GA	--
5/25/91	Teachers implementation of a program for promoting survival skills	Atwater, J.B., Carta, J.J., Schwartz, I.S.	ABA, Atlanta, GA	--
5/26/91	Classwide student self-assessment in teaching preschoolers with developmental delays in-class transition skills	Connell, M.C., Carta, J.J.	ABA, Atlanta, GA	--
5/26/91	The nature and importance of instruction in in-class transition skills in preschool students	Carta, J.J., Connell, M.C.	ABA, Atlanta, GA	--
5/28/91	Translative research: Moving educational innovations from experiment to the field	Carta, J. (chair)	ABA, Atlanta, GA	--
5/91	OT in the school	Dunn, W.	Shawnee Mission School District, Shawnee Mission, KS	50
5/91	Word acquisition: An issue of measurement?	Rice, M.L., Buhr, J., Oetting, J.	Second International Symposium on Specific Speech and Language Disorders in Children, Harrogate, England	--
5/91	Verb and inflection acquisition in language-impaired preschoolers	Watkins, R.V., Rice, M.L., Moltz, C.	Second International Symposium on Specific Speech and Language Disorders in Children, Harrogate, England	--
5/91	Verb learning of SLI preschool children	Bode, J.V. Rice, M.L.	Second International Symposium on Specific Speech and Language Disorders in Children, Harrogate, England	--

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
5/91	The role of language in early social interactions	Rice, M.L.	Gatlinburg Conference on Research and Theory in Mental Retardation and Developmental Disabilities, Key Biscayne, FL	--
5/91	Motivation and attention	Dunn, W.	NDT Association, Atlanta, GA	--
6/26/91	Promoting successful transition into school: Introduction and overview	O'Brien, M.	New Directions in Child and Family Research: Shaping Head Start in the '90s. Conference sponsored by the Administration for Children, Youth, & Families and others, Arlington, VA	--
6/26/91	Promoting successful transition into school: The role of language and social interaction skills	Rice, M., Wilcox, K., Hadley, P.	New Directions in Child and Family Research: Shaping Head Start in the '90s. Conference sponsored by the ACYF and others, Arlington, VA	--
6/26/91	Promoting successful transition into school: Early classroom survival skills - A training approach	Carta, J.J., Atwater, J.B., Schwartz, I.S.	New Directions in Child and Family Research: Shaping Head Start in the '90s. Conference sponsored by the ACYF and others, Arlington, VA	--
6/26/91	Promoting successful transition into school: Early identification of reading disabilities	Catts, H.	New Directions in Child and Family Research: Shaping Head Start in the '90s. Conference sponsored by the ACYF and others, Arlington, VA	--
6/91	Developmental neuroscience and clinical practice	Dunn, W.	Annual National Conference of the American Occupational Therapy Association, Cincinnati, OH	75
6/91	Interdisciplinary and integrated programming	Dunn, W.	Vancouver, Canada	75
7/16/91	Invited address. Ecological considerations in the education of young children with handicaps and their families	Carta, J.J.	Louisiana Early Education Program Early Intervention Summer Institute, New Orleans, LA	--
7/91	Integrated services for infants and toddlers	Dunn, W.	Cape May, NJ	30
8/15-16/91	Poster session. Circles of Inclusion (Montessori Preschool Integration Project)	Wickham, D.	Promising Practices Showcase Kansas Special Education Director's Meeting,	--

BEST COPY AVAILABLE

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
9/20/91	Keynote Address. Creating inclusive environments	Thompson, B.	Third Annual Conference, "Including All of Us: Creating Inclusive Environments", sponsored by Projects CHOICES & Apples, Springfield, IL	--
9/91	Interdisciplinary services in the schools	Dunn, W.	New Hampshire Occupational Therapy Association, Concord, NH	60
9/91	Best practices in early intervention and school based programs	Dunn, W.	Colorado Occupational Therapy Association, Denver, CO	100
9/91	The relationship between speech-language impairments and reading disabilities	Catts, H.	NATO conference on Differential Diagnosis and Treatment of Reading and Writing Disorders, Bonas, France	--
9/91	The new morbidity	Meck, N.E.	New Challenges in Disabilities Institute, Dept. of Health & Human Services, Kansas City, MO	--
10/9/91	Invited paper. A developmental language perspective on reading disabilities	Catts, H.	Symposium on Language Acquisition Problems and Dyslexia: Aspects of Diagnosis and Intervention, University of Bielefeld, Bielefeld, Germany	--
10/12-14/91	Presentation. Maternal perceptions of the transition process from NICU to home	Rasmussen, L., Meck, N.E., Claflin, K.	District V NAACOG Conference, Lexington, KY	--
10/22/91	Families and Children in Transition: The FACT Study	O'Brien, M., Robinson, M.P., Thiele, J.	Paper session presented at the Council for Exceptional Children/Division for Early Childhood's Sixth International Early Childhood Conference, Albuquerque, NM	--

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
10/91	Successful integration: Strategies for the 90's	Dunn, W.	Missouri Children's Center, Sedalia, MO	40
10/91	Functional Assessment: A contextual activity	Dunn, W.	University of Illinois at Chicago, Chicago, IL	60
10/91	Morphological deficits of SLI children: Evaluation of number marking and agreement	Rice, M.L., Oetting, J.B.	Boston University Conference on Language Development, Boston, MA	--
10/91	Grammatical deficits of specific language impaired children	Rice, M.L.	Max-Planck-Institut für Psycholinguistik, Nijmegen, The Netherlands	--
10/91	Social consequences of SLI: Peer interactions and teacher judgements	Rice, M.L.	Symposium on Language Acquisition Problems and Dyslexia: Aspects of Diagnosis and Intervention, University of Bielefeld, Bielefeld, Germany	--
10/91	Incorporating Naturalistic Language Intervention Within a Preschool Classroom	Bunce, B.	Inservice presented to personnel from the Special Education Regional Resource Center, Dayton, OH	180
11/1/91	Poster. The Kansas Early Childhood Research Institute on Transitions	Rice, M., O'Brien, M.	University of Kansas Medical Centers Research Day, Kansas City, KS	--
11/1/91	Poster. Longitudinal study of Families And Children in Transition (FACT Study).	Thiele, J., O'Brien, M., Rice, M.	University of Kansas Medical Centers Research Day, Kansas City, KS	--
11/1/91	Poster. Role of professionals in successful transitions	Dunn, W.	University of Kansas Medical Centers Research Day, Kansas City, KS	--
11/1/91	Poster. Programming successful classroom transitions: Assessment of children's survival skills and classroom requirements	Carta, J.J., Atwater, J., Greenwood, C.R.	University of Kansas Medical Centers Research Day, Kansas City, KS	--
11/1/91	Poster. Planning transition from the neonatal intensive care unit to the home	Meck, N., Topper, W.	1991 Faculty Research Day, University of Kansas Medical Center, Kansas City, KS	--

BEST COPY AVAILABLE

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
11/16/91	Transition from the NICU to home for high-risk infants and parents	McCluskey-Fawcett, K., O'Brien, M., Schwering, B., Soliday, E., Claflin, K.	Annual International Conference of the Council for Exceptional Children's Division for Early Childhood (DEC) on Children with Special Needs, St. Louis, MO	--
11/91	Developing win/win relationships in the NICU	Claflin, K., Meck, N.E., Rasmussen, L., Cannon, S.	Annual International DEC Conference, St. Louis, MO	--
11/91	A retrospective transition interview with parents of infants discharged from the NICU	Meck, N.E., Fowler, S., Claflin, K., Rasmussen, L.	Annual International DEC Conference, St. Louis, MO	--
11/91	Poster. Transition and integration of young children with severe and profound multiple disabilities into a community Montessori preschool program	Thompson, B.	Annual International DEC Conference, St. Louis, MO	--
11/91	Research symposium. Integrating young children into a mainstream preschool.	Thompson, B.	Symposium re: Qualitative Research on Inclusive Schooling (Early Childhood Level), Annual International DEC Conference, St. Louis, MO	--
11/91	Symposium. Prenatal drug exposure: Issues and implications for early intervention and education	Atwater, J.B. (chair)	Annual International DEC Conference, St. Louis, MO	--
11/91	Symposium paper. Educational implications of prenatal drug exposure	Carta, J.J.	Annual International DEC Conference, St. Louis, MO	--
11/91	Symposium. Developmentally appropriate practice: Is it appropriate for young children with disabilities?	Carta, J.J., Schwartz, I.S., Atwater, J.B., McConnell, S.	Annual International DEC Conference, St. Louis, MO	--
11/91	Poster. Links between early language development and academic performance of young students	Walker, D., Hart, B., Carta, J.J.	Annual International DEC Conference, St. Louis, MO	--

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
11/91	Specification of a linguistic phenotype	Rice, M.L.	Conference on Genetics of Communication Disorders, Annual meeting of the American Speech-Language-Hearing Association, Atlanta, GA	--
11/91	Miniseminar. Lexical acquisition of SLI children	Rice, M.L.	Conference on Genetics of Communication Disorders, Annual Meeting of the American Speech-Language-Hearing Association, Atlanta, GA	--
11/91	Poster. Grammatical morphemes of SLI preschoolers	Rice, M.L., Oetting, J.B.	Annual National Meeting of ASHA, Atlanta, GA	--
11/91	Poster. Effects of input frequency on SLI children's lexical acquisition	Rice, M.L., Oetting, J.B., Bode, J.V., Pae, S.	Annual National Meeting of ASHA, Atlanta, GA	--
11/91	The preschool speech intelligibility measure	Wilcox, K.A., Schooling, T.L., Morris, S.R.	Annual National Meeting of ASHA, Atlanta, GA	40
11/91	University voice clinic: An interdisciplinary training experience	Larrivee, L.S., Wegner, J.R., Wilcox, K.A., Larsen, A.S.	Annual National Meeting of ASHA, Atlanta, GA	100
11/91	Preparing staff to facilitate the inclusion of young children into mainstream community preschools: Training content and procedures	Wickham, D., Thompson, B.	Annual conference of the Association for Persons with Severe Disabilities (TASH), Washington, DC	--
11/91	Crackerbarrel: Some methodological, ethical and political issues which arise in doing qualitative research	Thompson, B. (symposium chair)	Annual TASH conference, Washington, DC	--
11/91	Family perspectives on their experiences in integrated preschools	Ault, M., Thompson, B.	Annual TASH conference, Washington, DC	--
11/91	Linking qualitative and behavior analytic methods in the analysis of communicative interactions of children with severe disabilities in integrated settings	Wegner, J.	Annual TASH conference, Washington, DC	--

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
11/91	The inclusion of young children with severe disabilities in Montessori preschools: A five-year qualitative investigation	Thompson, B.	Annual TASH conference, Washington, DC	--
12/6/91	Facilitating transitions for parents of NICU infants	O'Brien, M.	National Center for Clinical Infant Programs Seventh Biennial National Training Institute, Washington, DC	--
12/91	Best practices for therapists in community based programs.	Dunn, W.	Sudbury, Ontario, Canada	45
1/92	Blending of sensory integration and neurodevelopmental treatment in services to children	Dunn, W.	Long Island, NY	100
1/92	Myths and implications associated with prenatal drug exposure	Carta, J.J., McEvoy, M., McConnell, S.R.	Project Director's Meeting of the Early Education Program for Children With Disabilities, U.S. Dept. of Education	--
2/26/92	In-home intervention using videotape	Garland-Schwering, B.	Presentation to the Infant Team, Capper Foundation, Topeka, KS	--
3/18/92	Integrating young children with severe disabilities in a mainstream preschool: The Circle of Inclusion Project	Thompson, B., Wegner, J., Wickham, D., Mulligan Ault, M., Reinertson, B., Shanks, P.	Kansas Statewide Conference for personnel working with children and youth with severe disabilities and deaf/blindness, Manhattan, KS	--
3/29/92	The role of professionals in successful transitions	Thiele, J., Dunn, W.	National Meeting of the American Occupational Therapy Association, Houston, TX	45
3/92	Parents' perceptions of the NICU	Meck, N.	University of Kansas, Lawrence, KS	--
4/92	Treating the child with attention and perceptual processing deficits	Dunn, W.	Baton Rouge, LA	50
4/92	The educational aftermath of prenatal exposure to drugs and alcohol: Separating fact from fiction	Carta, J.J., McEvoy, M.	Invited showcase presentation of the Division of Early Childhood. Annual Convention of the Council for Exceptional Children, Baltimore, MD	--

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
5/10/92	How terrible are the terrible twos?	O'Brien, M.	Eighth International Conference on Infant Studies, Miami Beach, FL	--
5/10/92	Adjustment of mothers with preterm infants during the hospital to home transition	Asay, J.H., McCluskey-Fawcett, K., O'Brien, M.	Eighth International Conference on Infant Studies, Miami Beach, FL	--
5/92	An approach for measuring interbehavioral fields within early educational environments	Carta, J.J., Atwater, J.B., Greenwood, C.R., Schwartz, I.S.	18th Annual Convention of the Association for Behavior Analysis, San Francisco, CA	--
5/92	Programming generalization of self-assessed target behaviors by teaching early elementary students with behavioral disabilities to recruit contingent mainstream teacher praise	Connell, M.C., Carta, J.J., Baer, D.M.	18th Annual Convention of the Association for Behavior Analysis, San Francisco, CA	--
5/92	Poster. Classroom survival skills interventions: Demonstrations of short- and long-term effects	Carta, J.J., Atwater, J.B., Schwartz, I.S,	18th Annual Convention of the Association for Behavior Analysis, San Francisco, CA	--
5/92	Poster. Increasing interobserver reliability of scoring low frequency, real-time behaviors by scoring occurrence and non-occurrence	Connell, M.C., Atwater, J.B., Carta, J.J.	18th Annual Convention of the Association for Behavior Analysis, San Francisco, CA	--
5/92	Poster. Sequential analysis of teacher-student interaction in early intervention settings	Kullman, M.A., Atwater, J.B., Carta, J.J., Schwartz, I.S.	18th Annual Convention of the Association for Behavior Analysis, San Francisco, CA	
5/92	Poster	Schwartz, I.S., Carta, J.J., Atwater, J.B., Grant, S., Cowley, B.J., Giordano, S., Ross, G.	18th Annual Convention of the Association for Behavior Analysis, San Francisco, CA	--
5/92	Are we putting children at risk for school failure? Links between early language development and risk outcomes	Walker, D., Greenwood, C.R., Hart, B., Carta, J.J.	18th Annual Convention of the Association for Behavior Analysis San Francisco, CA	--
6/92	Best practices for pediatric therapists in the community	Dunn, W.	St. Johns, Newfoundland, Canada	35

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
6/92	Grammatical categories of specifically language-impaired children	Rice, M.L.	Language Impairments in Children, Bruton Conference, University of Texas-Dallas, TX	--
6/92	Early identification of reading problems in speech- and language-impaired children	Catts, H.	Bruton Conference on Language Impairments in Children, Dallas, TX	--
8/92	Integrating therapy services in school programs	Dunn, W.	Special School District of St. Louis County, St. Louis, MO	150
9/92	Best practices for therapists in schools	Dunn, W.	DCH Regional Medical Center, Tuscaloosa, AL	50
9/92	Integration and inclusion	Dunn, W.	University of Kansas Medical Center, Kansas City, KS	100
10/22/92	Invited paper. The unmothered child: Early attachment and later development	O'Brien, M.	16th Annual Governor's Conference for Prevention of Child Abuse and Neglect, State of Kansas, Lawrence, Kansas	--
10/92	The role of professionals in successful transitions	Dunn, W.	University of Illinois, Chicago, IL	25
11/3/92	Biological bases for grammar: A grammar gene?	Rice, M.L.	Samuel Williston Scientific Club, University of Kansas, Lawrence, KS	--
11/5-6/92	Transitions to kindergarten for children with disabilities	O'Brien, M., Rice, M.L.	Strengthening Linkages, National Policy Forum, US Dept. of Education/OERI and the US Dept. of Health & Human Services, Washington, DC	--
11/20-23/92	Poster. Talking at school: A survey of kindergarten teachers' attitudes	Hadley, P.A., Wilcox, K.A., Rice, M.L.	Annual National Meeting of American Speech-Language-Hearing Association (ASHA), San Antonio, TX	80
11/92	Short course. Classroom-based language intervention: variations on the LAP theme	Bunce, B.H., Watkins, R.V., Ellsworth, J., Torres, T.	Annual National Meeting of American Speech-Language-Hearing Association, San Antonio, TX	200
11/92	The role of professionals in successful transition	Dunn, W.	Research Day, University of Kansas Medical Center, Kansas City, KS	50

BEST COPY AVAILABLE

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
11/92	Poster. A comparison of the use of transition planning and routine discharge planning in the NICU	Meck, N.E., Ashworth, J.A., Crowson, J.J., Cameron, C.L.	Children's Rehabilitation Unit's Faculty Research Day, University of Kansas Medical Center, Kansas City, KS	--
11/92	Poster. A comparison of the use of transition planning and routine discharge planning in the NICU	Meck, N.E., Ashworth, J.A., Crowson, J.J., Cameron, C.L.	University of Kansas Medical Center Faculty Research Day and Poster Session, Kansas City, KS	--
11/92	Acoustics of Human Alarm Vocalizations	Holley, J.D., Comuzzie, D.K., Wilcox, K.A.	Annual National Meeting of American Speech-Hearing Association (ASHA), San Antonio, TX	--
11/92	A description of private practice	Sanders, J.A.W., Wilcox, K.A.	Annual National Meeting of American Speech-Hearing Association (ASHA), San Antonio, TX	--
11/92	Poster session. Inflectional morphology: A deviant component of SLI?	Oetting, J., Rice, M.L.	Annual National Meeting of American Speech-Hearing Association (ASHA), San Antonio, TX	--
11/92	Poster session. Classroom to classroom: New ways to interact	Wegner, J., Rice, M., Thompson, B.	Annual National Meeting of American Speech-Hearing Association (ASHA), San Antonio, TX	--
11/92	Issues in language and learning: Discussion of whole language paper presented at the annual conference of the American Speech-Language-Hearing Association	Catts, H.	Annual National Meeting of American Speech-Hearing Association (ASHA), San Antonio, TX	--
11/92	Poster. Kindergarten Speech-Language Impairment: Primary grade reading disability	Larrivee, L., Catts, H.	Annual National Meeting of American Speech-Hearing Association (ASHA), San Antonio, TX	--
11/92	Poster. Phonological awareness and first grade reading ability	Swank, L., Catts, H.	Annual National Meeting of American Speech-Hearing Association (ASHA), San Antonio, TX	--
11/92	The communicative competence of augmentative device users with different partners	McGuire, M., Wegner, J., Molineaux, B.	American Speech-Hearing Association, San Antonio, TX	--

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
11/92	How to create a successful 2 + program: Haskell and the University of Kansas Prepare Indian students as speech-language pathologists and audiologists	Wildcat, D., Wilcox, K., Hunt, M.	National Indian Education Association, Albuquerque, NM	--
12/92	Adults' judgements of preschool children with limited communication skill	Rice, M.L., Hadley, P.A., Alexander, A.L.	8th Annual Division for Early Childhood Conference on Children with Special Needs, Washington, DC	--
12/92	School based practices	Dunn, W.	New York City, NY	100
12/92	Strategies for full inclusion	Dunn, W.	DEC Conference, Washington, DC	75
2/93	Children with specific language impairment: Research developments and clinical implications	Rice, M.L.	Faculty of the Department of Communication Disorders, University of Texas-Dallas, TX	--
3/93	Poster presentation. The effects of prenatal drug-exposure on toddlers' temperament, development and play behavior	Storkamp, B.J., Meck, N.E.	1993 Biennial Meeting of the Society for Research in Child Development, New Orleans, LA	--
3/93	Incorporating field work and hands-on experience into large courses in developmental psychology	McCluskey-Fawcett, K., Linn, P.L.	1993 Biennial Meeting of the Society for Research in Child Development, New Orleans, LA	--
3/93	Symposia. Recruiting the next generation of developmental psychologists: Research on innovative techniques for undergraduate teaching	McCluskey-Fawcett, K., Linn, P.L.	1993 Biennial Meeting of the Society for Research in Child Development, New Orleans, LA	--
3/93	When baby comes home early: Family adjustment to prematurity from birth to 18 months	McCluskey-Fawcett, K., O'Brien, M., Soliday, E., Giusti, L., Garland-Schwering, B.	1993 Biennial Meeting of the Society for Research in Child Development, New Orleans, LA	--
3/93	Are working mothers different? Attitudes toward parenthood in employed and non-employed mothers of infants and toddlers	O'Brien, M.	1993 Biennial Meeting of the Society for Research in Child Development, New Orleans, LA	--
3/93	Developmental assessment of drug-exposed and non-exposed toddlers in foster care	Giusti, L.M.	1993 Biennial Meeting of the Society for Research in Child Development, New Orleans, LA	--

BEST COPY AVAILABLE

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
3/93	Drug-exposed children in foster care: Cross-sectional findings	Soliday, E.	1993 Biennial Meeting of the Society for Research in Child Development, New Orleans, LA	--
3/93	Keynote address. Language basis of reading disabilities: Implications for early identification and remediation	Catts, H.	1993 Annual Conference, Norwegian Association for Speech Pathologists and Audiologists, Oslo, Norway	--
3/93	Presentation. Early identification of language-based reading disabilities	Catts, H.	1993 Annual Conference, The New York Orton Dyslexia Society, New York, NY	--
3/93	Poster. Implications of language limitations for social acceptance in preschool	Gertner, B., Hadley, P.A., Rice, M.L.	1993 Biennial Meeting of the Society for Research in Child Development, New Orleans, LA	--
3/93	Symposium paper. Children with specific language impairment: What happens when language lags behind cognitive and social adjustment?	Rice, M.L.	Biennial meeting of the Society for Research in Child Development, New Orleans, LA	--
3/93	Poster. Preschoolers' use of syntactic cues in assignment of novel names to unfamiliar mass/count objects	Rice, M.L., Cleave, P.L., Oetting, J.B., Pae, S.	Biennial meeting of the Society for Research in Child Development, New Orleans, LA	--
4/93	Peer interaction, popularity, and adult judgements: Social consequences of specific language impairment	Rice, M.L.	Social and academic implications of specific language impairment in children, Intercampus Program Spring Symposium, Univ. of Kansas Medical Center, Kansas City, KS	--
4/93	Classroom-based preschool language intervention: Functional, fun, effect, and follow-up	Rice, M.L.	Advances in Pediatric Disorders Conference, Detroit, MI	--
5/93	Plural acquisition in children with specific language impairment	Oetting, J.B., Rice, M.L.	14th Annual Symposium on Research in Child Language Disorders, Madison, WI	--
5/93	Developmental phonological impairment: An acoustic description of improved production	Wilcox, K.A., Morris, S.R., Siren, K.A.	Acoustical Society of America, Ottawa, Ontario, Canada	--

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
7/14/93	Miniseminar. Great beginnings: Promoting positive relationships	O'Brien, M., McCluskey-Fawcett, K., Giusti, L.M., Soliday, E., Garland-Schwering, B.	Division of Continuing Education, Stormont-Vail Regional Medical Center, Topeka, KS	75
7/93	Classroom based language facilitation: Organizing principles and preliminary results	Wilcox, K.A.	Dept. of Speech and Hearing Sciences, Ohio State University, Columbus, OH	--
7/93	Clause structure and inflection in SLI: Preliminary observations and predictions	Rice, M.L., Wexler, K.	6th Annual International Congress for the Study of Child Language, University of Trieste, Trieste, Italy	--
8/93	Adult development: Life experiences of older women	Norman, S., & McCluskey-Fawcett, K.	American Psychological Association, Toronto	--
10/23/93	Maximizing children's success in new educational environments	Carta, J.J.	Iowa School Psychologists Association, Des Moines, IA	200
10/23/93	Through a toddler's eyes	O'Brien, M., Garland-Schwering, B., Gronwaldt, V.	1993 Kansas Association for the Education of Young Children (KAYEC) Annual Conference, Lawrence, KS	--
11/93	Presentation. Project FACES: A model program preparing foster and adoptive parents to receive infants who are prenatally exposed to drugs and alcohol	Mack, N.E., Hampton, J.	10th National Conference of Child Abuse and Neglect, Pittsburgh, PA	--
11/93	Children learning English as a second language: Classroom language facilitation	Bunce, B.H., Shirk, A.	American Speech-Hearing Association Meeting, Anaheim, CA	--
11/93	Case studies of grammatical change	Frome-Loeb, D., Bunce, B.H.	American Speech-Hearing Association Meeting, Anaheim, CA	--
11/93	Initial word comprehension by school-aged children with and without SLI	Oetting, J.B., Rice, M.L., & Swank, L.K.	American Speech-Language-Hearing Association National Meeting, Anaheim, CA	--

DATE	TITLE	AUTHORS	LOCATION	AUDIENCE #
11/93	SLI children's use of syntactic cues in lexical acquisition	Rice, M.L., Cleave, P., Oetting, J.B., & Pae, S.	American Speech-Language-Hearing Association National Meeting, Anaheim, CA	--

TRAINING

DATES	GROUP AND LOCATION	PRESENTERS	AUDIENCE #
6/88	Workshop. the relationship between reading and language disorders. University of North Carolina, Chapel Hill, NC	Catts, H.	--
9/12/88	Inservice. Title unrecorded. Speech-language pathologists, Kansas City, KS	Liebhaber, G.	25
9/88	Inservice. LAP staff. University of Kansas	Hadley, P.A., Sell, M.	8
10/19/88	Inservice. Pediatric grand rounds, KU Medical Center, Kansas City, KS	Hollowell, J., Meck, N.	25
10/88	Inservice. A preschool language facilitation curriculum. Kaw Valley Regional Inservice, Lawrence, KS	Rice, M.L., Wilcox, K.A., Liebhaber, G.	7
11/14/88	KECRI All-Institute Meeting. Planning and overview. KECRI, Univ. of Kansas, Lawrence, KS	Rice, M.L., O'Brien, M.	--
12/13/88	KECRI All-Institute Meeting. Planning and overview. KECRI, Univ. of Kansas, Lawrence, KS	Rice, M.L., O'Brien, M.	--
1/89	Audioteleconference. Grantmanship: Strategies for obtaining Federal funding. National office of the American Speech Language Hearing Association	Rice, M.L.	--
1/89	Inservice. Principles of language therapy with young children. Speech/language clinicians, Shawnee Mission Schools, Shawnee Mission, KS	Rice, M.L.	--
2/2/89	KECRI All-Institute Meeting. Planning and overview. KECRI, Univ. of Kansas, Lawrence, KS	Rice, M.L., O'Brien, M.	--
2/10/89	Proseminar. Visual-spatial skills and strategies in preschoolers. Dept. of Human Development and Family Life, Univ. of Kansas, Lawrence, KS	O'Brien, M.	--

DATES	GROUP AND LOCATION	PRESENTERS	AUDIENCE #
2/10/89	Workshop. The relationship between reading and language disorder. For speech-language pathology staff, Volusa County Schools, Daytona Beach, FL	Catts, H.	49
3/2/89	Workshop. Grant writing. United with Families: Early Childhood Intervention in Kansas Conference, Kansas Division of Early Childhood, Council for Exceptional Children	Fowler, S.	--
3/3/89	Workshop. Therapists as consultants: Educationally relevant goals. 7th Annual School-based Therapist Workshop, Ohio School Therapists Association, Cleveland, OH	Dunn, W.	75
3/9/89	Proseminar. Community approach to integrated service systems. Child Language Program, Univ. of Kansas, Lawrence, KS	Hazel, R.	--
3/89	Importance of early intervention with developmental delay, Child Psychiatry, KU Medical Center, Kansas City, KS	Meck, N.	15
4/8/89	Outreach Symposium. Clinical issues in speech-language pathology. Spring intercampus program in communicative disorders, KU Office of Continuing Education, Lawrence, KS	Baldwin, D.S., Carpenter, M.A., Diedrich, W. M., Ferraro, J.A., Waggoner, P.P., Wilcox, K.A.	--
4/8/89	Outreach Symposium/Workshop. Language-learning disabilities. Spring intercampus program in communicative disorders, KU Office of Continuing Education, Lawrence, KS	Catts, H.	--
4/13/89	Proseminar. Finding culture in children's development. Child Language Program, Univ. of Kansas, Lawrence, KS	Gallimore, R.	--
4/21/89	Workshop. Language-based reading disabilities. Upper Peninsula Speech-Language Hearing Association, Marquette, MI	Catts, H.	100

BEST COPY AVAILABLE

DATES	GROUP AND LOCATION	PRESENTERS	AUDIENCE #
4/24/89	Proseminar. What I learned about research funding in Washington (Review process and current initiatives for discretionary grants in early childhood). Dept. of Human Development and Family Life, Univ. of Kansas, Lawrence, KS	Fowler, S.	--
4/22/89	Workshop. Least restrictive environment preschool. Families Together, Topeka, KS	Thompson, B., Wegner, J., Wickham, D., Rienertson, B., Shanks, P.	--
5/17/89	Training presentation. Programmatic research aimed at the reduction and analysis of academic risk. Institute of Life Span Studies, Univ. of Kansas, Lawrence, KS	Greenwood, C.R.	--
5/89 - 11/89	Workshops. Building relationships between staff, clients, and parents, Community Living Opportunities, Overland Park, KS	Alai-Rosales, S.	30
5/89 - 1/90	Workshops. The consulting process, Community Living Opportunities, KU Alumni Center, Overland Park, KS	Alai-Rosales, S.	20
6/12-13/89	Workshop. The language bases of reading disabilities. Fort Hays State University, KS	Catts, H.	95
6/28/89	Workshop. The language bases of reading disabilities. Language-Learning Disabilities Institute, Emerson College, Boston, MA	Catts, H.	120
6/89	Kansas Regional Perinatal Case Program, Bethany Medical Center, Kansas City, KS	Meck, N.	50
7/11-14/89	Appalachian State University, Boone, NC	Bunce, B.H.	45
7/89	Workshop. Integrating neurodevelopmental treatment (NDT) and sensory integration (SI), Cape May, NJ	Dunn, W.	--
8/17/89	RAPIDS Program. Parsons, KS	Schwartz, I., Connell, M.	--

DATES	GROUP AND LOCATION	PRESENTERS	AUDIENCE #
8/31/89	Workshop. Language-based reading disabilities. Speech and language pathology staff, Kansas City, Missouri School System	Catts, H.	90
8/89	Workshop. Perceptual evaluation and treatment toward independent. Regional interdisciplinary professional workshop, Pittsburg, PA	Dunn, W.	100
9/21/89	Inservice. Classroom management techniques to use with preschool children. Children's Learning Center, Lawrence, KS	Cooper, A.Y.	–
9/25-29/89	Functional programming for students with severe disabilities. Ann Sullivan Center, Lima, Peru	Thompson, B.	25
11/1/89	Unrecorded title. Lamb Early Childhood Center, Kansas City, KS	Carta, J., Atwater, J., Schwartz, I.	–
11/8/89	Special Early Intervention Program Staff, University of Kansas	Wickham, D., Young, K., Thompson, B.	—
11/9/89	KECRI ALL-Institute Meeting. Planning and review, research update. KECRI, Univ. of Kansas, Lawrence, KS	Rice, M.L., O'Brien, M.	–
11/17/89	Short course. Early identification of reading disabilities. 1989 Annual Conference, American Speech-Language-Hearing Association, St. Louis, MO	Catts, H.	
11/20/89	Miniseminar. Identification and remediation of early reading problems. 1989 Annual Conference, American Speech-Language-Hearing Association, St. Louis, MO.	Catts, H. Kamhi, A.	
11/30 - 12/1/89	Workshop. Promoting academic success: The role of speech-language pathologists. 1989 North Carolina Annual Conference, Division Exceptional Children, Winston-Salem, NC	Catts, H.	175

DATES	GROUP AND LOCATION	PRESENTERS	AUDIENCE #
11/89	Miniseminar. Language therapy within a preschool classroom setting: Implementation and supervision. American Speech-Language-Hearing Association Convention, St. Louis, MO	Bunce, B.H. Watkins, R.V.	--
11/89	Short course. Early identification of reading disabilities. 1989 Annual Convention, American Speech-Language-Hearing Association, St. Louis, MO	Catts, H.	--
11/89	Miniseminar. Identification and remediation of early reading problems. 1989 Annual Convention, American Speech-Language-Hearing Association, St. Louis, MO	Catts, H. Kamhi, A.	--
12/89 - 1/90	Inservice workshops (series). Kansas State Dept. of Education: Hays, Dodge City, Wichita, & Newton, KS	Fowler, S.A.	210
1/16/90	KECRI All-Institute Meeting. Planning and review, research update. KECRI, Univ. of Kansas, Lawrence, KS	Rice, M.L., O'Brien, M.	--
1/25/90	Proseminar. Verbal interactive skills transition project (VIST). Child Language Program, Univ. of Kansas, Lawrence, KS	Hadley, P.A.	35
2/15/90	Workshop. Reading problems: What can we do? Help for classroom teachers and parents. Kaw Valley Council for Exceptional Children, Lawrence, KS	Catts, H.	10
2/22/90	Proseminar. Language intervention in a naturalistic setting. Child Language Program, Univ. of Kansas, Lawrence, KS	Bunce, B.H.	35
2/28/90	Workshop. Language basis of reading disabilities. 1990 Annual Convention, Illinois Speech-Language-Hearing Association, Chicago, IL	Catts, H.	150
2/90	Workshop Current issues in providing related services in the schools. Critical issues for Occupational Therapists in the school system, Phoenix, AZ	Dunn, W.	--

DATES	GROUP AND LOCATION	PRESENTERS	AUDIENCE #
3/28/90	Workshop. Making better referrals: Detecting and describing children with special needs. Kansas City, Missouri Headstart Training, Kansas City, MO	Carta, J.J.	--
4/10/90	Workshop. Young children at risk: Drug exposed, environmentally-deprived, or medically fragile. SRS Foster Care Training, Kansas City, KS	Carta. J.J.	--
4/12/90	Proseminar. Acquisition of speech skills in preschool children. Child Language Program, Univ. of Kansas, Lawrence, KS	Wilcox, K.	35
4/13/90	Workshop. Kansas City, Kansas School System, Kansas City, KS	Carta, J.J.	45
4/19/90	Proseminar. Communicative interactions of children with severe disabilities. Child Language Program, Univ. of Kansas, Lawrence, KS	Wagner, J.	35
4/20/90	Workshop. Topeka Public Schools (USD 501). Topeka, KS	Carta, J.J.	--
4/90	Workshop. Reading disabilities: Implications for the speech-langeuge pathologist. Speech-language pathology staff, Kansas City Public School District, Kansas City, KS	Catts, H.	--
4/90	Inservice workshop. Early identification of reading disabilities. Speech-language pathology staff, Topeka Public Schools (USD 501), Topeka, KS	Catts, H.	--
5/4/90	Teleconference. Language learning disabilities: Assessment & intervention for school-aged children. American Speech-Hearing Association, Washington, D.C.	Catts, H. Miller, L. Nelson, N.	--
5/18/90	Workshop. Factors in transitioning children with SMH into a Montessori program: Replication of a model program.	Thompson, B., Mulligan-Ault, M., Wickham, D., Shanks, P., Young, K.	20

DATES	GROUP AND LOCATION	PRESENTERS	AUDIENCE #
6/26/90	Workshop. Language basis of reading disabilities: Early identification, assessment, and remediation. Arlen Matkin Fall Workshop, Glendale, AZ	Catts, H.	125
7/12/90	Workshop. Language basis of reading disabilities: Implications for the speech-langauge pathologist. 1990 Annual Summer Institute, Utah State University, Logan, UT	Catts, H.	100
7/90	Workshop. Integrating neurodevelopmental treatment (NDT) and sensory integration (SI). Cape May, NJ	Dunn, W.	150
7/90	Workshop. Developing observation systems. Annual Research Project Directors' Meeting, Division of Innovation and Development, OSEP, USDE, Washington, DC	Carta, J.J.	--
8/6/90	Workshop. Language basis of reading disabilities. Language Learning Disabilities Institute, Emerson College, San Diego, CA	Catts, H.	50
8/28/90	Inservice. Building a knowledge base for teaching drug-exposed preschoolers. Metropolitan Child Development Corporation, Regional Headstart Inservice Training, Kansas City, MO	Carta, J.J.	70
8/90	Workshop. LAP: Language facilitation techniques within the early childhood classroom. For speech pathologists and early childhood teachers at Jenks Early Education enrishment Program Inservice, Jenks, OK	Bunce, B.H.	--
8/90	Workshop. Unrecorded title. Infant Project, American-Speech-Language-Hearing Association, Washington, DC	Dunn, W.	--
10/6/90	Workshop. Successful intervention for dyslexia: A developmental language disorder. The Orton Dyslexia Society, Kansas City, MO	Catts, H.	100

BEST COPY AVAILABLE

DATES	GROUP AND LOCATION	PRESENTERS	AUDIENCE #
10/21/90	Workshop. Mainstreaming education planning for preschoolers with severe and profound multiple disabilities. Preconference training workshop, CEC/DEC 6th International Early Childhood Conference on Children with Special Needs, Albuquerque, NM	Thompson, B., Wickham, D., Wegner, J., Shanks, P., Reinertson, B., Mulligan-Ault, M.	–
10/31/90	Proseminar. Parent vs. professional judgments of speech and language skills. Child Language Program, Univ. of Kansas, Lawrence, KS	Hadley, P.A.	35
11/7/90	Proseminar. Application of ecobehavioral analysis to the study of young children with disabilities. Child Language Program, Univ. of Kansas, Lawrence, KS	Schwartz, I., Carta, J., Atwater, J.	50
11/19/90	Miniseminar. Forum on whole language. Annual Convention, American Speech-Language-Hearing Association Convention, Seattle, Washington	Catts, H. Cheney, C. Norris, J.	–
1/91	Inservice. Implementing the LAP model: A followup. JEEEP (Jenks Early Education Enrichment Program), Jenks, OK	Bunce, B.H.	10
1/24/91	Proseminar. The genetic bases of specific language impairment. Child Language Program, Univ. of Kansas, Lawrence, KS	Rice, M.L.	45
2/5/91	Inservice. Transitions. The Sunshine Center, Olathe, KS	Dunn, W.	50
2/11/91	Inservice. Transitions. Children's Center for the Visually Impaired, Kansas City, KS	Dunn, W.	50

DATES	GROUP AND LOCATION	PRESENTERS	AUDIENCE #
2/15/91	Workshop. Language basis of reading disabilities: Implications for intervention. Kent Area Speech-Language Association, Grand Rapids, MI	Catts, H.	135
2/18/91	Inservice. Transitions. Olathe Developmental Living Center, Olathe, KS	Dunn, W.	50
2/28/91	Proseminar. Predicting reading achievement in specific-language impaired children. Child Language Program, Univ. of Kansas, Lawrence, KS	Catts, H.	35
2/91	Workshop. Language facilitation techniques within a preschool classroom. University of Oklahoma Health Science Center, Oklahoma City, OK	Bunce, B.H.	75
2/91	Guest lecture (HDFL 222 course). Children in modern society. Univ. of Kansas, Lawrence, KS	O'Brien, M.	120 undergraduate students
2/91	Guest lecture (HDFL 460 course). Child development. Univ. of Kansas, Lawrence, KS	O'Brien, M.	85 undergraduate students
2/91	Workshop. Recognizing and implementing research opportunities.	Mack, N.	8
3/12/91	Guest lecture (PSYC 333 course). Child psychology. Univ. of Kansas, Lawrence, KS	McCluskey-Fawcett, K.	250 undergraduate students
3/19-21/91	Workshop. Integrating alternative augmentative communication into the school day. Central Kansas Cooperative, Salina, KS	Wegner, J.	25
3/21/91	KECRI All-Institute Meeting. P.L. 99-457. KECRI, Univ. of Kansas, Lawrence, KS	Moler, J., Thiele, J.	30
3/27/91	Inservice. Transitions. Olathe Developmental Living Center, Olathe, KS	Dunn, W.	50
3/27/91	Inservice. Transitions. The Sunshine Center, Olathe, KS	Dunn, W.	47

DATES	GROUP AND LOCATION	PRESENTERS	AUDIENCE #
3/91	Workshop. Preparing children for the mainstream: Teaching classroom survival skills to young children with special needs. Kansas Division for Early Childhood, Annual Conference, Kansas City, KS	Schwartz, I.S. Atwater, J.B. Carta, J.J.	--
4/21/91	Guest lecture (HDFL 771 course). KECRI: Longitudinal data collection on infants and toddlers and their families. Univ. of Kansas, Lawrence, KS	Boisen, M., Robinson, M.P., O'Brien, M.	25 graduate students
4/30/91	KECRI All-Institute Meeting. Changing Dreams: The baby with spina bifida. KECRI, Univ. of Kansas, Lawrence, KS	Evans, D.	28
4/91	Workshop. Encouraging language development in young children. Douglas County Child Development Association, Lawrence, KS	Bunce, B.H.	40
4/91	Teleconference. Training family members at intervention agents for children with language impairments ages birth to five. National office of the American Speech-Language-Hearing Association	Rice, M.L.	--
4/91	Workshop. Unrecorded title. Graduate seminar on gifted education, Univ. of Kansas, Lawrence, KS	O'Brien, M.	20 graduate students
4/91	Workshop. Language basis of reading disabilities: Implications for speech-language pathologists. 1991 Annual Convention, North Carolina State Speech-Language-Hearing Association, Raleigh, NC	Catts, H.	200

DATES	GROUP AND LOCATION	PRESENTERS	AUDIENCE #
5/9/91	Workshop. Language basis of reading disabilities: Implications for speech-language pathologists. 1991 Annual Convention, New Jersey Speech-Language-Hearing Association, Atlantic City, NJ	Catts, H.	115
5/91	Workshop. Language intervention within a preschool classroom: The LAP model. Kansas Speech-Language-Hearing Association Early Childhood Workshop, Lawrence, KS	Bunce, B.H.	40
5/91	Inservice: LAP consultation and SICS training. Health Sciences Center, University of Oklahoma, Oklahoma City, OK	Hadley, P.	7
5/91	Training presentation. Occupational therapy in the schools. Shawnee Mission Schools, Shawnee Mission, KS	Dunn, W.	40
6/24/91	KECRI All-Institute Meeting. Introduction and overview. KECRI, Univ. of Kansas, Lawrence, KS	O'Brien, M.,	--
6/24/91	KECRI All-Institute Meeting. The role of language and social interaction skills. KECRI, Univ. of Kansas, Lawrence, KS	Rice, M.L., Wilcox, P.A., Hadley, P.	--
6/24/91	KECRI All-Institute Meeting. A survival skill training approach. KECRI, Univ. of Kansas, Lawrence, KS	Carta, J.J., Schwartz, I., Atwater, J.	--
6/24/91	KECRI All-Institute Meeting. Predicting and preventing reading problems. KECRI, Univ. of Kansas, Lawrence, KS	Catts, H.	--
7/17/91	Workshop. Research on early childhood language program features. Annual OSEP Project Director's Meeting, Washington, DC	Jenkins, J., Kaiser, A., Carta, J.	--
7/18/91	Workshop. Research careers. Annual OSEP Project Director's Meeting, Washington, DC	Carta, J.J.	20
7/25/91	Satellite teleconference. Meaningful inclusion of young children with severe disabilities into early childhood programs, Project PRECEDE: Preschool and Rural Education, Collaborative	Thompson, B.	100

BEST COPY AVAILABLE

DATES	GROUP AND LOCATION	PRESENTERS	AUDIENCE #
	Electronic Distance Education; Pre-K Summer Institute via Satellite Teleconferencing, Jacksonville, FL		
7/91	Training presentation. Louisiana Early Education Program Summer Institute.	Carta, J.	300
8/12/91	Training presentations, team discussions, parent meetings & student consultations for Jenks Public Schools, Jenks, OK	Wegner, J.	30
8/91	Inservice. Incorporating language intervention within a classroom setting. Early Education Program, Hutchinson, KS	Bunce, B.H.	35
9/6/91	Proseminar. The NICHD Study of Early Child Care. Dept. of Human Development & Family Life, Univ. of Kansas, Lawrence, KS	Huston, A., O'Brien, M.	50
9/20/91	Workshop. Integrating young children with severe disabilities into mainstream preschools. Third Annual Early Choices Conference on Including All of Us: Creating Inclusive Environments, sponsored by Project CHOICES & Project Apples, Springfield, IL	Thompson, B.	150
9/25/91	Proseminar. The EarlyCare Toddler Program: Language in the classroom. Child Language Program, University of Kansas, Lawrence, KS.	O'Brien, M., Cook, A.	30
9/91	Nursing Course. Behavioral state in the neonate. University of Kansas Medical Center Critical Care Nursing Course for NICU nurses, Kansas City, KS	Meck, N.E.	8
9/91	Research forum for discussion of developmental disabilities. The new morbidity: Implications for policy. Children's Rehabilitation Unit, KU Medical Center, Kansas City, KS	Meck, N.E.	15
9/91	Presentation to the KU Medical Center Neonatology Group (neonatologists, developmental pediatricians & neonatal nurses). Transition planning in the NICU, Kansas City, KS	Meck, N.E.	7

DATES	GROUP AND LOCATION	PRESENTERS	AUDIENCE #
Fall/91	Presentation to psychiatry residents & medical students. Follow-up of NICU graduates. KU Medical Center, Kansas City, KS	Meck, N.E.	5
10/3/91	KECRI All-Institute Meeting. Presentation and working discussion. The longitudinal study of Families And Children in Transition — Update. KECRI, Univ. of Kansas, Lawrence, KS	Thiele, J., O'Brien, M.	20
10/9/91	Proseminar. A preschool speech intelligibility measure. Child Language Program, Univ. of Kansas, Lawrence, KS	Wilcox, K.A., Morris, S. & Schooling, T.	30
10/91	Inservice. Incorporating naturalistic language intervention within a preschool classroom. Special Education Regional Resource Center, Dayton, OH	Bunce, B.H.	180
11/20/91	Proseminar. Predicting toddler mastery behaviors from mother-child characteristics. Child Language Program, Univ. of Kansas, Lawrence, KS	Robinson, P.	30
11/91	Miniseminar. Lexical acquisition of SLI children. American Speech-Language-Hearing National Meeting, Atlanta, GA	Rice, M.L.	75
11/91	Presentation to medical & allied health staff. NICU follow-up. Humana Medical Center, Overland Park, KS	Meck, N.E.	5
11/91	Inservice. Naturalistic language intervention within a preschool classroom. Inservice presented to personnel from the East Central Ohio Special Education Regional Resource Center, New Philadelphia, OH	Bunce, B.	72
11/91	Short course. Early identification and remediation of language-based reading disabilities. Annual Meeting of the American Speech-Language-Hearing Association, Atlanta, GA	Catts, H.	400

BEST COPY AVAILABLE

DATES	GROUP AND LOCATION	PRESENTERS	AUDIENCE #
12/6/91	Proseminar. Is specific language impairment inherited? Dept. of Human Development & Family Life, Univ. of Kansas, Lawrence, KS	Rice, M.L.	50
1/23/92	Proseminar. Communicative interactions of children with severe disabilities. Child Language Program, Univ. of Kansas, Lawrence, KS	Wegner, J.	30
1/30/92	Proseminar. Speech-language impairments and reading disabilities. Child Language Program, University of Kansas, Lawrence, KS	Catts, H.	30
1/92	Nursing course. Research in the NICU. University of Kansas Medical Center Critical Care Nursing Course for NICU nurses, Kansas City, KS	Meck, N.E.	14
1/92	Presentation to medical & allied health staff. NICU follow-up. Humana Medical Center, Overland Park, KS	Meck, N.E.	5
2/6 - 2/7/92	Workshop. Languate basis of reading disabilities: Implications for speech-language pathologists. Special School District of St. Louis County, Town and Country, MO	Catts, H.	270
2/6 - 2/7/92	Workshop. Language basis of reading disabilities: Implications for intervention. Special School District, St. Louis County, Town and Country, MO	Catts, H.	270
2/14/92	Proseminar. Language in a social context. Dept. of Human Development & Family Life, Univ. of Kansas, Lawrence, KS	O'Brien, M.	50
2/20/92	Proseminar. Increasing peer initiations with adult redirections. Child Language Program, Univ. of Kansas, Lawrence, KS	Schuele, M.	35
2/22-23/92	Training to administer Bayley Scales. NICHD Study of Early Child Care research assistants, University of Wisconsin, Madison, WI	O'Brien, M.	40 project staff & graduate students
2/92	Guest lecture (HDFL 222 course). Children in Modern Society, Univ. of Kansas, Lawrence, KS	O'Brien, M.	120 undergraduate students

DATES	GROUP AND LOCATION	PRESENTERS	AUDIENCE #
2/92	Short course. Social consequences of language impairment. Illinois Speech-Language-Hearing Association, Chicago, IL	Rice, M.L.	--
2/92	Proseminar. Recognizing and implementing research opportunities. Presentation to the University of Kansas Family Center staff & students	Mack, N.E.	6
2/92	Inservice. Encouraging speech and language development in the classroom. Headstart Teachers, Lawrence, KS	Bunce, B.	10
2/92	Proseminar. Preparing staff to facilitate young children into mainstream preschools: Training content and procedures. Presentation to Early Intervention Program and Human Development & Family Life Preschool personnel, University of Kansas, Lawrence, KS	Wickham, D. & Thompson, B.	15
2/92	Short course. Social consequences of language impairment, Illinois Speech-Language-Hearing Association, Chicago, IL	Rice, M.L.	150
3/2/92	KECRI colloquium. How should we meet the goal of America 2000? Lawrence, KS	Fowler, S.	100
3/20/92	Parent training. Viewing of KECRI videotapes Circle of inclusion; The process of communication; and The process of instruction. Dept. of Special Education, Univ. of Kansas, Lawrence, KS	Thompson, B.	--
3/92	Invited lecture. Parents' pereptions of the NICU. University of Kansas, Lawrence	Mack, N.E.	50
3/92	Short course. Social interactions: Intervention models for the preschool population. Ohio Speech-Hearing Association, Cleveland, OH	Rice, M.L.	225
3/92	Workshop. Integrating young children with severe disabilities into mainstream preschools. Molene, IL	Thompson, B.	90

DATES	GROUP AND LOCATION	PRESENTERS	AUDIENCE #
3/92	Social consequences of language impairment. Social interactions: intervention models for the preschool population. Ohio Speech and Hearing Association, Cleveland, OH	Rice, M.L.	70
5/21/92	KECRI All-Institute Meeting. The Newborn Transition Project (1.3) presentation of Introduction to the NICU (KUMC) and Caring for Your NICU Baby videotapes. Presentation and working discussion, KECRI, Univ. of Kansas, Lawrence, KS	McCluskey-Fawcett, K. & O'Brien, M.	20
5/92	Workshop. Language basis of reading disabilities: Clinical implications. Cimarron Conference on Communications Disorders. Stillwater, OH	Catts, H.	150
6/92	Workshop. Changing the intervention focus. Workshop for personnel serving infants and toddlers with special needs and their families. Lawrence, KS	Meck, N.	65
6/92	Workshop. Documenting the fidelity of a program model at home and replication sites. NEC*TAS Evaluation Meeting for EEPCD Projects, Denver, CO	Carta, J.J.	30

DATES	GROUP AND LOCATION	PRESENTERS	AUDIENCE #
6/92	Workshop. Strategies for measuring integration outcomes. NEC*TAS Evaluation Meeting for EEPCD Projects, Denver, CO	Carta, J.J. 20	
7/92	Workshop. Developmentally Appropriate Practices: A starting point for inclusion of young children with disabilities into regular preschool educational settings. Early Intervention Summer Workshop, George Washington University, Washington, DC	Carta, J.J.	20
7/92	Workshop. Language basis of reading disabilities: Clinical implications. Summer Program in Communication Disorders, University of Pacific, Stockton, CA	Catts, H.	90
7/92	The use of Preconception Planning.	Meck, N.	18
7/92	Workshop. Speech and language service for preschool children: naturalistic assessment and treatment. Temple University, Philadelphia, PA	Bunce, B.	--
9/23/92	Proseminar. Child Language Program, Univ. of Kansas, Lawrence, KS	Larrivee, L.	35
9/25/92	Proseminar. EarlyCare Toddler Program: Language in the classroom. Child Language Program, Univ. of Kansas, Lawrence, KS	O'Brien, M., Cook, A.	35
10/14/92	Proseminar. Language facilitation within a preschool classroom. Child Language Program, Univ. of Kansas, Lawrence, KS	Bunce, B.H.	35
10/21/92	Proseminar. The effectiveness of redirects in increasing peer interactions. Child Language Program, Univ. of Kansas, Lawrence, KS	Schuele, M.	35
10/28/92	Proseminar. Who do you want to play with? The influence of communicative competence on peer preferences. Child Language Program, Univ. of Kansas, Lawrence, KS	Gertner, B.	
10/92	Workshop. Language basis of reading disabilities. Scarbourough General Hospital, Toronto, Canada	Catts, H.	145

DATES	GROUP AND LOCATION	PRESENTERS	AUDIENCE #
10/92	Workshop. Early identification and remediation of language-based reading disabilities. British Columbia Association of Speech/Language Pathologists and Audiologists. *Victoria, Canada*	Catts, H.	150
10/92	Workshop. Facilitating language in the classroom. For teachers and speech pathologists in Jenks, OK	Bunce, B.H.	—
10/92	Workshop. Language basis of reading disorders. New Mexico Speech-Language-Hearing Association. Albuquerque, NM	Catts, H.	100
10/92	Lecture to Medical Students/KUMC. The role of the physician in preconception planning. KU Medical Center, Kansas City, KS	Meck, N.	200
11/4/92	Proseminar. Child Language Program, Univ. of Kansas, Lawrence, KS	Cleave, P.	35
11/92	Short course. Classroom-based language intervention: variations on the LAP theme. American Speech-Language-Hearing Association Convention, San Antonio, TX	Bunce, B.H., Watkins, R.V., Ellsworth, J., Torres, T.	--
12/2/92	Proseminar. Vocabulary acquisition curves in the second year. Child Language Program, Univ. of Kansas, Lawrence, KS	O'Brien, M.	35
1993	Workshop for Graduate Credit. HDFL 725: Strategies for integrating young children with disabilities inservice training workshops. Offered and presented several times for the SP '93, FA '93, and SU '93 semesters through KU and to the following school districts: Blue Valley, KS; Olathe, KS; Turner, KS; Kansas City-Kansas, KS; Shawnee Mission, KS; Sioux City, IA; St. Paul, MN; Fredonia, NY	Carta, J.J.	300+
1/93	Workshop. Indirect language facilitation techniques: At home and in the classroom. For parents and staff, Developmental Learning Center, Olathe, KS	Bunce, B.H.	--

DATES	GROUP AND LOCATION	PRESENTERS	AUDIENCE #
1/93	Workshop. Implementing naturalistic language intervention with a preschool classroom. For speech pathologists and early childhood educators, Lawrence, KS	Bunce, B.H.	--
1/93	Workshop. Techniques for language facilitation. For speech pathologists, Bowling Green, OH	Bunce, B.H.	--
2/11/93	Proseminar. A longitudinal investigation of auxiliary acquisition in SLI children. Child Language Program, Univ. of Kansas, Lawrence, KS	Hadley, P.	45
2/18/93	Proseminar. Learning a new language the full immersion way: Observations from a learner's diary. Child Language Program, Univ. of Kansas, Lawrence, KS	Rice, M.L.	50
3/11/93	Proseminar. A summative view of the Language Acquisition Preschool. Child Language Program, Univ. of Kansas, Lawrence, KS	Wilcox, K.A., Rice, M.L.	45
3/18/93	Research forum for the discussion of developmental disabilities. The analysis of the individual education planning process during transition. Children's Rehabilitation Unit, KU Medical Center, Kansas City, KS	Dunn, W.	50
3/93	Course. Early intervention in the NICU. Neonatal Critical Care Course, KU Medical Center, Kansas City, KS	Mack, N.E.	8
4/1/93	Research forum for the discussion of developmental disabilities. Educational implications of prenatal substance abuse. Children's Rehabilitation Unit, KU Medical Center, Kansas City, KS	Carta, J.J.	50

BEST COPY AVAILABLE

DATES	GROUP AND LOCATION	PRESENTERS	AUDIENCE #
4/20/93	Proseminar. Early Childhood Research Institute on Drug Exposed Infants. Applied Research Series, Dept. of Human Development & Family Life, Univ. of Kansas, Lawrence, KS	Carta, J.J., Ross, G.	50
4/93	Workshop. Implementing naturalistic language intervention with a preschool classroom. For speech pathologists and early childhood educators, Greenbush, KS (Sponsored by Kansas Inservice Training System and Head Start, Integration, Training and Support Systems for Children with Severe Disabilities)	Bunce, B.H.	--
5/6/93	KECRI Summative Symposium. Research findings and review of information. KECRI, Univ. of Kansas, Lawrence, KS	Rice, M.L., O'Brien, M. (PIs)	--
5/6/93	Lecture. Lessons we have learned in NICU transitions. KECRI Summative Symposium, Life Span Institute, University of Kansas, Lawrence	Meck, N.E.	55
6/93	Workshop. Language basis of reading disabilities: Implications for early identification and remediation. Outreach Programs, University of Wisconsin-Madison, Madison, WI	Catts, H.	--
7/93	Workshop. Great beginnings: Promoting positive relationships between infants and their caregivers. Stormont-Vail Regional Medical Center, Topeka, KS	O'Brien, M., McCluskey-Fawcett, K., Giusti, L., Soliday, E., Garland-Schwering, B.	--
8/93	Keynote Address/presentation at workshop. Language basis of reading disabilities: Clinical implications. 7th Annual Summer speech/Language Hearing and Special Education Seminars, South Tahoe, CA	Catts, H.	--
9/93	Presentation/lecture. PSYCH 993, Seminars in Social Development, Univ. of Kansas, Lawrence, KS	McCluskey-Fawcett, K.	--
10/27/93	Proseminar. Morphosyntax of children with specific language impairment: The story of BE and DO. Child Language Program, Univ. of Kansas, Lawrence, KS	Rice, M.L.	

DATES	GROUP AND LOCATION	PRESENTERS	AUDIENCE #
10/93	Lecture. PSYCH 333, Child Psychology, Univ. of Kansas, Lawrence, KS	McCluskey-Fawcett, K.	--
10/93	Lecture. PSYCH 334, Child Psychology-Honors, Univ. of Kansas, Lawrence, KS	McCluskey-Fawcett, K.	--
10/93	Workshop. Through a toddler's eyes. Kansas Association for the Education of Young Children (KAYEC), Lawrence, KS	O'Brien, M., Garland-Schwering, B., & Gronwaldt, V.	--
11/93	Miniseminar. Facilitating peer interactions: Social skills for preschool and kindergarten success. American Speech-Language-Hearing Association National Meeting, Anaheim, CA	Rice, M.L., Wilcox, K.A., Hadley, P.A., & Schuele, C.M.	--
11/93	Miniseminar. Investigation morphosyntactic deficits from a linguistic perspective. American Speech-Language-Hearing Association National Meeting, Anaheim, CA	Rice, M.L., Hadley, P.A., Schuele, C.M., Wexler, K.	--
11/3/93	Proseminar. Normally developing and specifically language impaired children's management of disputes. Child Language Program, Univ. of Kansas, Lawrence, KS	Redmond, S.	—
11/17/93	Proseminar. Child Language Program, Univ. of Kansas, Lawrence, KS	O'Brien, M.	—

443

442

8. DISSEMINATION

Dissemination Coordinator: Carolyn Roy, Ph.D.
Dissemination Assistant: Shawna Rosen

A major goal of the Institute has been timely dissemination of the transition intervention strategies developed by its projects to a variety of audiences, both professional and lay. The dissemination activities were designed primarily to provide information and intervention materials that address the needs of service providers, administrators, policy makers, and state personnel, at national and local levels, as they set up, coordinate, and implement transition services for young children with disabilities and their families. Those needs were described in the goals of the 1985 Kansas Plan for Comprehensive Developmental Services for Preschool Handicapped Children:

- to encourage and support parent and family involvement in all aspects of the delivery of comprehensive services to preschool handicapped children
- to provide information to the general public, parents, families, policy makers, advocates, and professionals concerning the need for prevention, early intervention, and the availability of health, social and education services
- to assure state and local interagency coordination of appropriate comprehensive developmental services for preschool handicapped children and their families
- to ensure sufficient appropriately trained personnel for the preschool population
- to emphasize development of acceptable methods to help children cope with and adjust to their environment.

To help meet those needs, the following dissemination objectives were established:

- to provide a full range of dissemination support services to the Institute research projects
- to complement the management and coordination activities of the Institute core administrative staff in the area of dissemination.

In fulfillment of those objectives, the Institute has published and made available such materials as articles for professionals and families, training manuals, informational videotapes, transition planning guides, and a newsletter on transitions. Further materials are in the final phases of preparation. For complete details of Institute materials, refer to the Product List in Section 7 of this report.

DISSEMINATION ACTIVITIES

Below are summarized the general dissemination activities of the Institute and the core dissemination staff. For details of the dissemination accomplishments of individual projects, see the report for each project. Completed products and other specific dissemination activities of the projects are listed in the charts in Section 7.

Administration

Given the cross-disciplinary nature of the Institute's research, the range of transition issues covered, the variety of intervention strategies being investigated, the wide age range of children included, and the diversity of the targeted audiences, a multi-faceted approach to dissemination was called for.

To meet the dissemination objectives, a central dissemination component was established at the start of the Institute, managed by the Co-Directors and the Dissemination Coordinator/Assistant Director. In addition, each KECRI research project incorporated dissemination activities into its plan. The core staff have worked with the individual projects throughout their planning and research phases to ensure appropriate dissemination strategies, activities, timelines, and coordination among projects.

Coordination of dissemination activities has involved:

- monitoring the dissemination activities of the individual Institute projects and coordinating information exchange among the projects;

- tracking information on new products, journal and book articles, forthcoming conferences, calls for papers, University seminars and guest lectures, etc., and distributing such information to relevant project personnel including graduate trainees;

- establishing computer desktop-publishing systems and common KECRI logo and formatting designs for core dissemination staff and members of the research projects to produce high-quality, camera-ready masters for printing or photocopying;

- regular meetings between core dissemination staff and representatives of other groups at the University of Kansas such as the Beach Center on Families and Disability, the former Kansas Research Institute for the Early Childhood Education of the Handicapped (Early Childhood Institute), and computer/electronic communications personnel to discuss common interests including contact lists, bibliographies, and dissemination planning;

- assisting projects with revising, editing, and desktop-publishing documents;

- assisting the Institute Co-Directors and other project personnel in preparing materials (overhead transparencies, handouts. poster displays, and other documents) for presentations at professional meetings.

Targeted audiences

Information and products have been directed toward persons at all levels of involvement with children who have disabilities and who undergo transitions from one service setting to another. Consumers include:

- practitioners in education, health, social services, and related fields
- administrators and policy makers in the above fields
- appropriate local and state departments and agencies
- families of children who have disabilities or who are at risk
- national, regional, and local parent organizations
- researchers

KECRI resource library

A resource library was set up in the KECRI core offices, with two functions: to make available transition-related materials that may be consulted by Institute personnel to support their research activities; and to disseminate materials to external audiences when products are requested. Data bases were created on computer and updated as needed to catalogue all library contents, record items borrowed, and track requests for KECRI products and dissemination of those products.

1. In-house library materials. The KECRI resource library housed books, articles, professional papers, transition guides and models from other projects; catalogues of literature and other media pertaining to transitions for children with disabilities and their families; reference lists, resource lists, and bibliographies; newsletters of general interest to the projects; and materials produced by the projects themselves.

2. Literature searches. Dissemination staff assisted investigators in literature searches at the University libraries, as needed. The dissemination staff also monitored potential sources of transition information such as a variety of relevant periodicals. References and abstracts were entered in the computer data bases so that searches and sorts by author, key word, etc., might be conducted as required. Copies of abstracts or articles of interest to a particular project were sent directly to that project.

3. Reference lists. The Pro-Cite software package was obtained to manage references for KECRI projects. Reference data bases were created and updated as needed. From these data bases, selected reference lists could be easily generated and tailored to an individual publication as required.

External dissemination

1. Mailing lists. Computer data bases were created in Smartware II and updated as needed for mailing lists for national distribution of KECRI materials. Mailing lists were obtained from such sources as the NEC*TAS directories of state contacts, the Early Childhood Law and Policy Reporter lists of federal and state agencies, the University Affiliated Programs, and contact lists provided by state agencies and in newsletters (such as DEC Communicator) dealing with early intervention and transition topics. The combined KECRI mailing lists included early childhood contacts for each state (including the state Part H and 619 coordinators and ICC chair), parent groups, researchers, service agencies, and organizations for individuals with disabilities at national, regional and local levels, as well as individual service providers, educators and parents who requested to be added to the lists. Dissemination activities such as conference presentations by Institute

personnel and distribution of KECRI newsletters or brochures generated further requests to be added to our mailing lists. Revised lists were obtained regularly from the various sources and the mailing data bases were updated accordingly. As of fall 1993, the KECRI national mailing data base contained a total of almost 4,500 entries.

2. Materials available for dissemination. The following documents have been disseminated from the KECRI core offices:

- four issues of the Institute newsletter, *Transitions*
- two brochures describing the Institute's work in general
- an introductory description of the Institute giving more detail than the brochures
- a series of 18 Working Papers (most of them now published in books or refereed journals) generated by the individual research projects
- copies of articles by project personnel published directly in books or journals
- reference lists and bibliographies produced by the projects
- a series of guides produced by the Language Acquisition Preschool, the site of KECRI Project 2.3
- a series of papers on transition authored by Dr. Susan Fowler and her colleagues in association with the KECRI and, earlier, with the former Project BEST at the University of Kansas
- the entire set of documents produced for dissemination by the former Kansas Research Institute for the Early Childhood Education of the Handicapped (Early Childhood Institute) at the University of Kansas.

Lists of available materials were updated as needed and mailed out in response to requests to the Institute for information on its products. Charges were made to cover only the costs of copying and mailing items. Dissemination staff handled invoices, billing, receipts, bookkeeping, and other processing of requests for the various materials disseminated by the KECRI core.

In addition to materials available through the KECRI core offices, each project also disseminated its own materials, particularly products that are not articles, such as videotapes, manuals, and observation instruments.

A complete list of all materials produced by the KECRI and available for dissemination is contained in Section 7 of this report.

3. Newsletter. The Institute newsletter, Transitions, was developed as a forum for presentation of the transition issues being investigated by the KECRI and dissemination of preliminary findings in a popular, descriptive format (as opposed to in technical article format). The primary audience for the newsletter was conceived as professionals in service delivery and policy, although the newsletter was also designed in such a way as to be appropriate for researchers and parents of children with special needs. Responses to the newsletter have been very positive throughout, and the Institute continues to receive a steady flow of requests for copies.

4. Requests received by the Institute. Requests for newsletters and other products, references and bibliography materials, and general information, were processed as received. The information was also entered into the computerized data base for tracking requests and the Institute's responses to them. Over the Institute's five years, almost 1,000 such requests were processed by the core dissemination staff, and many more requests were made directly to individual project personnel.

5. Presentations at professional meetings. Over the funding period, a total of 308 presentations were made at conferences and other professional meetings by KECRI investigators, staff and graduate trainees. For details, please see Section 7 of this report.

9. TRAINING

The Institute has been strongly committed to training throughout. Its structure has offered graduate students an ideal opportunity for multi-disciplinary research and dissemination experiences in topics related to transitions of young children with disabilities and their families. Over the Institute's five years, a total of 63 predoctoral students were appointed as graduate trainees (15 to 24 trainees each year), in areas as diverse as allied health, human development and family life, medicine, psychology, sociology, special education, and speech-language-hearing; trainees typically served on a research project for at least a year, and often, in the case of doctoral students, for several years. Trainees have worked with individual project investigators and helped design and implement specific studies. They also participated in other activities relevant to cross-disciplinary training in transition topics, as the opportunities arose. See the lists at the end of this section for further information on graduating students and their research topics.

In addition to the graduate trainees, a total of 34 undergraduate and graduate student research assistants performed a variety of specific duties as directed by project investigators. While research assistants' experience with the Institute tended to be not as broad or intense as that of the graduate trainees, it was often an integral part of their degree—for example, as a practicum supplementing coursework, or in generating a required research paper.

For the formal graduate trainees, the Institute's training objectives were:

- to provide intensive practical research experiences around a specific set of research questions in a trainee's area of study, covering such aspects as methodology, literature review, design of study, data collection, data analysis, interpretation of results, writing and presentation of papers;
- to provide exposure to the research of all the disciplines represented in the Institute, including the different theoretical frameworks, research models, methods, and procedures.

The first objective has been addressed at the level of individual trainee participation. The second objective was addressed at the level of group participation.

MAJOR TRAINING ACTIVITIES

Administration

Management of the Institute's training activities and goals was overseen by the Institute Co-Directors and project Principal Investigators who appointed graduate trainees to their individual research projects. Two trainees were designated as student representatives in the management team, and the Assistant Director served as liaison between trainees and core staff. Trainees participated in cross-disciplinary activities as well as working on a specific research project.

Research experiences

Trainees' specific research activities were assigned by the principal investigator of the KECRI project to which the trainee was attached. Trainees' responsibilities have included, for example, helping design research instruments, conducting interviews with parents of children with disabilities, carrying out comprehensive literature searches and reviews, helping analyze data, generating instructional videotapes for families of children with special needs or professionals who work with them, producing instructional manuals for parents and professionals, and writing research reports.

Coursework

Trainees completed courses at the University of Kansas Lawrence and Medical Center campuses as needed to fulfill their degree requirements and as advised by their project principal investigators. Trainees were encouraged to include courses from a variety of disciplines.

Meetings and seminars

Trainees participated in the All-Institute meetings, in Training meetings, and in Institute workshops and seminars with guest speakers, as described under Coordination in Section 5 of this report. These meetings proved to be valuable instructional occasions in exposing trainees to the ways of research studies and disciplines outside their own area.

Trainees also participated in a number of contacts with external scholars and professionals in fields related to transition topics, and meetings with visitors to their projects who were consulting on the research.

Liaison with KECRI core

The Assistant Director monitored and distributed to the trainees information about relevant seminars, guest lectures, and similar events occurring in the University of Kansas, as well as announcements about professional meetings outside the University, relevant research literature references, and so on.

Trainees consulted the resources of the KECRI in-house library of materials on transition topics, and contributed reference lists and bibliography materials developed in their individual research projects to the library.

Graduate trainees' progress reports

At the end of each University semester, every current trainee submitted a progress report detailing courses taken, readings accomplished, seminars and other professional meetings attended, professional writing and presentations, research activities such as data collection or analysis, and collaboration with other Institute projects to date, along with plans for the next months. Progress reports were reviewed by the Assistant Director. All trainees have had productive research experiences from a multi-disciplinary perspective. Their reports are stored in the KECRI core files.

External training presentations by KECRI personnel

KECRI investigators, staff and trainees have conducted many inservice and pre-service seminars and workshops for students, practitioners and other professionals across the nation. Please refer to Section 7, Training Presentations for a list of these training activities.

STUDENTS AFFILIATED WITH THE INSTITUTE

Project 1.1:

Nina Mackta	Trainee	Graduated, Sociology
Everett E. Corum	Trainee	Graduated, Music & Drama
L. Kay Metzger	Trainee	Graduated, Music Therapy/Music Ed.
Kevin McInney	Rsh. Asst.	Graduated, unknown

Project 1.2:

Arthur Satterfield	Trainee	Completed M.A., now doc candidate, Psychology, KU
Patricia Ann Dinas	Trainee	Completed M.A., now post-doc intern, Davis, CA
Anne Merrill-Steskal	Trainee	Took leave from her grad studies
Barbara Storkamp	Trainee	Completed M.A., now doc candidate, Psychology, KU
Javier Mouriz	Trainee	Completed M.A., grad internship at Ft. Leavenworth Federal Penitentiary, KS
Diane Brandmiller	Trainee	Completed M.A., now doc candidate, Counseling Psych., KU
Christine Cameron	Trainee	Completed M.A., now doc candidate, Psychology, KU
Michael Danovsky	Trainee	Completed M.A., now Psych Intern, Brown University, Boston
Michelle Bishop	Trainee	Completed M.A., now doc candidate, Psychology, KU
Janet Ashworth	Trainee	Completed M.A., now doc candidate, Psychology, KU
Elizabeth Stella	Trainee	Graduated

Project 1.3:

Pat Robinson	Trainee	Graduated, Ph.D., Human Development, now research associate, Maharishi International University, Fairfield, IA
Janet Asay	Trainee	Graduated, Ph.D., Clinical Psychology, now providing clinical services/family intervention at a State social service agency in upstate NY

Project 1.3 (continued):

Lisa Sheikh	Trainee	Graduated, M.A., Human Development, now video production asst., Discovery Channel, NY, NY
Barbara Schwering	Trainee	Completed M.A., now doc. candidate, Human Development, working in OT position in Baldwin (KS) School System.
Elizabeth Soliday	Trainee	Completing Ph.D., Clinical Psychology
Amy Toberer	Rsh. Asst.	Graduated, B.S., Art & Design
Karen Levy	Rsh. Asst.	Completing coursework/undergrad
Brian Cox	Rsh. Asst.	Completing coursework/undergrad
Julie Fritz	Rsh. Asst.	Discontinued her undergraduate education

Project 2.1:

Linda Haymes	Trainee	Graduated, Ph.D.

Project 2.2:

Dee Dee Dillon Leon	Trainee	Graduated, M.A., SPED
Jennifer Pasley	Trainee	Graduated, Ph.D., SPED
Susan Hendrikse	Trainee	Graduated, M.A., SPED
Dan Shoemake	Trainee	Graduated, Ph.D., SPED
Cheryl Jacob	Trainee	Completing Master's, SPED
Meiling Chiang	Trainee	Completing Master's, SPED
Donna Wickham	Trainee	Graduated, Ph.D., SPED, Asst. Professor of Special Education (Early Childhood and Severe Disabilities Program Areas) Minot State University, Minot, ND
Kim Wilson Young	Trainee	Graduated, M.A., SPED, Parent Educator at Parents As Teachers Program, Northeast Kansas Education Service Center, Lecompton, KS
Lisa Sics-Holmes	Trainee	
Jami Sweeney	Rsh. Asst.	Completed, M.A., Grad. Asst. on Outreach Inclusion Project in Replication Site
Jennifer Brull	Rsh. Asst.	Completing KU, Senior in Pre-Med
Kristy Heinrich	Rsh. Asst.	Completing KU, Senior in Education Dept.
Terry Lit	Rsh. Asst.	Graduated, M.A., SPED, ECSE teacher in inclusive Early Childhood Program, Tuscon Independent School District (?)
Alex Stegemann	Rsh. Asst.	Graduated, M.A., SPED, now coordinating ECSE Teacher in inclusive early childhood program, Minneapolis, MN
Lori Spurney	Rsh. Asst.	Graduated, M.A., SPED, now ECSE teacher at inclusion program in Shawnee Mission (KC), KS

Project 2.2 (continued):

Tracy Brooke	Rsh. Asst.	Graduated, M.A., SPED, ECSE specialist in Turner, KS
Marisol Perez	Rsh. Asst.	Graduated, M.A., SPED, now ECSE Teacher, KC, KS
Leslie Kimura	Rsh. Asst.	Graduated, M.A., SPED, now Primary Special Education teacher, Students With Severe Disabilities, Los Angeles, CA
Dianne Lovell	Rsh. Asst.	Graduated, M.A., SPED, ECSE teacher, Wellsville, KS
Janie Foltz	Rsh. Asst.	Graduated, M.A., SPED, now Infant/toddler Special Education Teacher, Infant Development Center, Shawnee Mission, KS
Jackie Mense	Rsh. Asst.	Graduated, M.A., SPED, now ECSE teacher, Inclusion Program, Shawnee Mission, KS
Pam Shanks	Rsh. Asst.	Graduated, M.A., SPED, now Director for Special Education and Early Childhood Teacher, Raintree Montessori School, Lawrence, KS
Jill Gibb	Rsh. Asst.	Completing graduate coursework, SPED; now Special Education Teacher for Students with Severe Disabilities, Hutchinson, KS

Project 2.3:

A. L. Alexander	Trainee	Graduated, M.A., Speech Pathology
Pat Cleave	Rsh. Asst.	Completing graduate coursework at KU
Linda Erickson	Rsh. Asst.	Completing M.A., Speech Pathology
Bethany Gertner	Trainee	Graduated, M.A., Speech Pathology, now Speech-Language Pathologist in Iowa
Pamela Hadley	Trainee	Graduated, Ph.D., Speech Pathology; Asst. Prof., Arizona State Univ.
Jenny Helzer	Rsh. Asst.	Completing graduate coursework at Univ. of Texas
Sherrill Morris	Rsh. Asst.	Completing Ph.D., Speech Pathology
Sean Redmond	Trainee	Completed M.A., now doc. student, Child Language Program
Tracy Schooling	Trainee	Graduated M.A., Speech Pathology, now Speech Pathologist in Virginia
Leslie Stephens	Trainee	Graduated, M.A., Speech Pathology, now Speech Pathologist at Rehab Hospital in Topeka, KS
Colette Thomas	Trainee	Completing M.A., Speech Pathology
Ruth Watkins	Rsh. Asst.	Graduated, Ph.D., Child Language, Asst. Prof., Univ. of Illinois
Annette Weinberg	Trainee	Graduated, M.A., Speech Pathology

Project 2.4:

Svein Eikeseth	Trainee	Graduated, Ph.D., HDFL
Angela Duarte	Trainee	Graduated
Shahla S. Ali-Rosales	Trainee	Graduated
Jessica Potucek	Trainee	Graduated
Susan Milla	Trainee	Graduated

Project 3.1:

Mitch Connell	Trainee	Graduated, M.A., HDFL, now Asst. Prof. Utah State
Kathleen Baggett	Trainee	Completing Master's coursework, Counseling
Michael Kullman	Trainee	Graduated, Ph.D. HDFL
Suely Guimaraes	Trainee	Completing doc. coursework, HDFL
Georgios Sideridis	Trainee	Completed M.A., now doc. candidate, HDFL

Project 3.2:

Linda Swank	Trainee	Graduated, Ph.D., Speech-Language-Hearing
Amy Larsen	Trainee	Graduated, M.A., now Speech-Language Pathologist in Minnesota
Laurie Stewart	Trainee	Graduated, M.A., Speech-Language-Hearing
Chieh-Fang Hu	Trainee	Graduated, M.A., Speech-Language-Hearing
Linda Larrivee	Trainee	Completing coursework, Ph.D., Speech-Language-Hearing
Melissa Thomas	Trainee	Graduated, M.A., Speech-Language-Hearing
Deb Solner	Rsh. Asst.	Completing coursework/undergrad
Shauna McIntosh	Rsh. Asst.	Completing coursework/undergrad

Project 4.1:

Ann Ebert	Rsh. Asst.	Completing coursework/undergrad

Project 4.2:

Dee Leman	Trainee	Graduated, Occupational Therapy
Michele Terry Hardy	Trainee	Graduated, Occupational Therapy
Jeff Belden	Rsh. Asst.	Completing coursework/undergrad
Ronda Sulltrop	Rsh. Asst.	Completing coursework/undergrad
Kathy Wood	Trainee	Completing coursework
Nancy Miller	Trainee	Graduated, Occupational Therapy
Jane Cox	Trainee	Graduated, Occupational Therapy
Ken Lassman	Trainee	Graduated, Ph.D., Occupational Therapy
Kristen Luchtefeld	Rsh. Asst.	Completing coursework/undergrad, OT
Marla Musick	Rsh. Asst.	Completing coursework/undergrad, OT
Deana Wolf	Rsh. Asst.	Completing coursework/undergrad, OT
Teri New	Rsh. Asst.	Completing coursework/undergrad, OT
Inga Harding	Rsh. Asst.	Completing coursework/undergrad, OT

Project 5.0:

Melissa Boisen	Trainee	Completes Ph.D., HDFL Spring '94
Pat Robinson	Trainee	Graduated, Ph.D., HDFL
Ann Cook	Trainee	Graduated, M.A., HDFL
Sean Redmond	Trainee	Completing coursework, M.A.
Karen Ruff	Trainee	Completing coursework, M.A.
Colette Thomas	Trainee	Completing coursework, M.A.
Pat Cleave	Trainee	Completing coursework, Ph.D.
Yun Ye	Rsh. Asst.	Unknown

STUDENT DISSERTATIONS, THESES AND OTHER PAPERS PRODUCED

Alexander, A.L. (Master's thesis, 1991). Kindergarten teachers' impressions of children with communication handicaps. University of Kansas, Department of Speech-Language-Hearing.

Rice, M.L., Hadley, P.A., & Alexander, A.L. (1993). Social biases toward children with speech and language impairments: A correlative causal model of language limitations. Applied Psycholinguistics, 14.

Asay, Janet (Dissertation, 1993). Adjustment of mothers and families with preterm infants during the hospital to home transition. University of Kansas, Department of Psychology.

McCluskey-Fawcett, K., O'Brien, M., Robinson, M.P., & Asay, J. (1992). Early transitions for the parents of premature infants: Implications for intervention. Infant Mental Health Journal, 13, 147-156.

Belden, Jeff (senior research project). Transition strategies in preschool following inservices from occupational therapists. Also presented at KU Medical Center's, OT Senior Research Day. University of Kansas, Department of Occupational Therapy Education.

Berman, Alan (senior research project). An analysis of medically related problems being addressed at IEP meetings. Also presented at KU Medical Center's OT Senior Research Day. University of Kansas, Department of Occupational Therapy Education.

Brooke, Tracy (Master's thesis, 1992). A comparison of an integrated setting versus a special education setting using the CEVIT (Coding environmental variables and interactions on tape). University of Kansas, Department of Special Education.

Connell, M. C. (Master's thesis, 1991). Programming generalization of in-class transition skills by teaching preschoolers with developmental delays to recruit contingent classroom teacher praise. University of Kansas.

Connell, M.C., Carta, J.J., Randall, C., & Wilson, J. (1993). Building in-class transitions: teaching in-class transition skills to preschoolers with developmental delays through choral-response-based self-assessment and contingent praise. Education and Treatment of Children, 16, 160-174.

Connell, M.C., & Carta, J.J. (1990). Promoting transfer of academic support skills in mainstreaming through recruitment of contingent praise training in students with behavioral disabilities. Student-initiatiated Grant funded by the Office of Special Education and Rehabilitation Services, Washington, D.C.

Foltz, Janie (Master's thesis, 1990). Service assessment of special education programs' and Head Start programs' awareness of the availability of child care programs for children with special needs: A descriptive analysis of a Kansas statewide survey. University of Kansas, Department of Special Education.

Garland-Schwering, Barbara (Master's thesis, 1993). Engagement of toddlers in an early intervention classroom and its relation to teacher directiveness. University of Kansas, Department of Human Development and Family Life.

Gertner, Bethany L. (Master's thesis, 1993). Who do you want to play with? The influence of communicative competence on peer preferences in preschoolers. University of Kansas, Department of Speech-Language-Hearing

Hadley, P.A., & Rice, M.L. (1991). Conversational responsiveness in speech and language impaired preschoolers. Journal of Speech and Hearing Research, 34, 1308-1317.

Hadley, P.A., & Rice, M.L. (1993). Parental judgments of preschoolers' speech and language development: A resource for assessment and IEP planning. Seminars in Speech and Language, 14(4), 278-288.

Rice, M.L., Wilcox, K., & Hadley, P. (1992). Promoting successful transition into school: The role of language and social intervention skills. In Conference Proceedings — New Directions in Child and Family Research: Shaping Head Start in the 90's (pp. 320-322). Administration on Children, Youth and Families, U.S. Dept. of Health and Human Services, Washington, DC.

Rice, M.L., Sell, M.A., & Hadley, P.A. (1990). The Social Interactive Coding System (SICS): An on-line, clinically relevant descriptive tool. Language, Speech, and Hearing Services in the Schools, 21(1), 2-14.

Rice, M.L., Sell, M.A., & Hadley, P.A. (1991). Social interactions of speech and language impaired children. Journal of Speech and Hearing Research, 34, 1299-1307.

Harding, Inga (senior research project). Preschool interdisciplinary teams: planning for transition. University of Kansas, Department of Occupational Therapy Education.

Hardy, Michelle (senior research project). An anaysis of written and verbalized IEP goals. Also presented at KU Medical Center's OT Senior Research Day. University of Kansas, Department of Occupational Therapy Education.

Kimura, Leslie (Master's thesis, 1991). *The CEVIT (Coding environmental variables and interactions on tape: A tool for observing young children with severe multiple disabilities in an integrated Montessori school*. University of Kansas, Department of Special Education.

Catts, H., Hu, C., & Larrivee, L. (1992). The relationship between reading disabilities speech-language impairments. *Working Papers in Language Development*.

Catts, H., Hu, C., Larrivee, L., & Swank, L. (1993). The early identification of reading disabilities in speech-language impaired children. In R. Watkins & M. Rice (Eds.), *Specific impairments in children: Current directions in research and instruction*. Baltimore: Paul H. Brookes Publishing Co.

Fey, M., Catts, H., & Larrivee, L. (in press). Preparing preschool children with language impairments for the transitions to school. In M. Fey, J. Windsor, & S. Warren (Eds.), *Language impairments in the primary school years: The current state and future directions*. Baltimore, MD: Paul H. Brookes Publishing Company.

Lassman, Ken (senior research project). The role of professionals in successful transitions: A comparison of two school-based interdisciplinary teams. Also presented at KU Medical Center's OT Senior Research Day. University of Kansas, Department of Occupational Therapy Education.

Leman, Dee (senior research project). A comparison of written IEP goals and verbal representation of these goals in formal case meetings. Also presented at a Kansas Occupational Therapy Association meeting and KU Medical Center's OT Senior Research Day. University of Kansas, Department of Occupational Therapy Education.

Lit, Terry (Master's thesis, 1993). *A comparison of integration facilitators of young children with severe disabilities in an inclusive preschool setting*. University of Kansas, Department of Special Education.

Lovell, Dianne (Master's thesis, 1991). *The Muppet Learning Keys™ versus keyboard: A comparison of young children's computer time*. University of Kansas, Department of Special Education.

Luchtefeld, Kristen (senior research project). Parental satisfaction and involvement: Easing the transition to kindergarten. University of Kansas, Department of Occupational Therapy.

Mense, Jackie (Master's thesis, 1990). Service assessment of child care and preschool program current practices and willingness to accept children with special needs: A descriptive analysis of a Kansas statewide survey. University of Kansas, Department of Special Education.

Miller, Nancy (senior research project). Training early childhood interventionists skills to facilitate transitions. Also presented at KU Medical Center's OT Senior Research Day. University of Kansas, Department of Occupational Therapy Education.

Morris, Sherrill R. (Master's thesis, 1991). Validity of the preschool speech intelligibility measure. University of Kansas, Department of Speech-Language-Hearing.

Musick, Marla (senior research project). Transition process of children with special needs. University of Kansas, Department of Occupational Therapy Education.

New, Teri (senior research project). Functions of interdisciplinary teams in public education settings. University of Kansas, Department of Occupational Therapy Education.

Perez, Marisol (Master's thesis, 1992). Parental attitudes and perceptions about integrating children with disabilities. University of Kansas, Department of Special Education.

Robinson, Mary Patricia (Dissertation, 1992), Influence of maternal and child factors on maternal depression and quality of interaction and toddler mastery behaviors and interactive play maturity. University of Kansas, Department of Human Development and Family Life.

Schooling, Tracy (Master's thesis, 1991). Preschool speech intelligibility measure (PSIM): An assessment of reliability. University of Kansas, Department of Speech-Language-Hearing.

Shanks, Pam (Master's project, 1990). Rediscovering the potential in a children's house: A handbook for persons facilitating the integration of young children with severe disabilities in a Montessori environment. University of Kansas, Department of Special Education.

Sheikh, Lisa (Master's thesis, 1992). Discharge teaching in the NICU: A comparison of staff and parent perceptions of information available. University of Kansas, Department of Human Development and Family Life.

Sideridis, G.D. (Master's thesis, 1992). Attitudes of Kansas elementary physical and music educators towards integrating disabled students in the regular classroom. University of Kansas.

Stargardter, Sandra (Master's thesis, 1988). Staff and parents' perceptions about the integration of children with severe and multiple disabilities into a community preschool program. University of Kansas, Department of Special Education.

Stegamann, Alex (Master's thesis, 1993). A re-analysis of videotaped segments of three young children with severe disabilities in two preschool environments. University of Kansas, Department of Special Education.

McCluskey-Fawcett, K., O'Brien, M., & Soliday, E. (in press). Premature, low-birth-weight and technology assisted infants. In M. C. Roberts (Ed.), Handbook of Pediatric Psychology (2nd ed.). New York: Guilford.

Spurney, Lori, (Master's thesis, 1992). An investigation into the implementation of five mainstream early childhood programs in Kansas. University of Kansas, Department of Special Education.

Sulltrop, Ronda (senior research project). Transition planning from special preschools to public school kindergartens. Also presented at Kansas Occupational Therapy Association meeting and KU Medical Center's Research Day. University of Kansas, Department of Occupational Therapy Education.

Catts, H., Swank, L., McIntosh, S., & Stewart, L. (1990). Precursors of reading disorders in language-impaired children. Working Papers in Language Development, 5, 44-54. Child Language Program, The University of Kansas.

Catts, H., Swank, L., Stewart, L., Larsen, A., McIntosh, S., Wiggins, K., & Hu, C. (1991). A longitudinal study of speech-language impaired children. Working Papers in Language Development. Child Language Program, The University of Kansas.

Culp, R.E., Watkins, R.V., Lawrence, H., Letts, D., Kelly, D.J., & Rice, M.L. (1991). Maltreated children's language and speech development: Abused, neglected, and abused and neglected. First Language, 11, 377-389.

Johnson, J., Watkins, R., & Rice, M.L. (1992). Bimodal bilingual language development in a hearing child of deaf parents. Applied Psycholinguistics, 13, 31-52.

Watkins, R.V., & Rice, M.L. (1991). Verb particle and preposition acquisition in language-impaired preschoolers. Journal of Speech and Hearing Research, 34, 1130-1141.

Watkins, R.V., & Rice, M.L. (Eds.) (1993). Specific language impairments in children: Current directions in research and intervention. Baltimore, MD: Paul H. Brookes Publishing Co.

Watkins, R.V., Rice, M.L., & Moltz, C.C. (1993). Verb use by language-impaired and normally developing children. First Language, 13, 133-143.

Wegner, Jane (Doctoral dissertation, 1991). From classroom to classroom: New ways to interact. University of Kansas, Department of Speech, Language and Hearing.

Weinberg, Annette (Master's thesis, 1991). Construct validity of the speech and language assessment scale: a tool for recording parents judgments. University of Kansas, Department of Speech-Language-Hearing.

Wickham, Donna (Doctoral dissertation, 1993). An investigation of video based individualized training for paraprofessionals in inclusive classrooms. University of Kansas, Department of Special Education.

Wolf, Deana (senior research project). Parental feedback concerning transitions from special preschools to public schools. University of Kansas, Department of Occupational Therapy Education.

Wood, Kathy (senior resarch project). Comparison: Transition planning and intervention. University of Kansas, Department of Occupational Therapy Education.

10. PERSONNEL

INSTITUTE ADMINISTRATORS

Dr. Mabel Rice, Co-Director
Dr. Marion O'Brien, Co-Director
Dr. Judith E. Thiele, Asst. Director (10/90 to 9/92)
Dr. Carolyn Roy, Asst. Director and Dissemination Coordinator

PROJECT INVESTIGATORS

Project 1.1: Parental Adjustment to the birth of a child with disabilities and early hospital transitions: An audio-visual parent-to-parent informational model.
PI: Daryl Evans, Ph.D., Sociology Department, KU

Project 1.2: Planning transition from the Neonatal Intensive Care Unit to the home.
PIs: Nancy E. Meck, Ph.D., Child Development Unit (CDU), KU Medical Center
Susan Fowler, Ph.D. (formerly with Life Span Institute, KU)
Joseph G. Hollowell, M.D., (formerly with CDU, KU Medical Center)
Katherine Claflin, M.D. (formerly with Pediatrics Department, KU Medical Center)

Project 1.3: In-home intervention to facilitate the transition from NICU-to-home.
PIs: Kathleen McCluskey-Fawcett, Ph.D., Psychology Department, KU
Marion O'Brien, Ph.D., Human Development & Family Life, KU

Project 2.1: Programming a successful transition from home to preschool: Developing individualized treatment programs to teach appropriate social skills.
PIs: Susan A. Fowler, Ph.D., formerly with Life Span Institute, KU
Alita Cooper, M.A., Human Development & Family Life, KU

Project 2.2: Transitioning preschool children with severe and profound multiple disabilities from a special education classroom program into mainstream Montessori preschool and child care programs.
PIs: Barbara Thompson, Ph.D., Special Education Department, KU
Jane Wegner, Ph.D., Speech-Language-Hearing Department, KU

Project 2.3: Verbal interactive skills training for transitions.
PIs: Mabel L. Rice, Ph.D., Speech-Language-Hearing Department, KU
Kim A. Wilcox, Ph.D., Speech-Language-Hearing Department, KU

Project 2.4: Transfer of information on Child Academic Skills and classroom procedures from Preschool to parents, and parents to preschool, as a pretransition intervention for successful school entry.
PIs: Barbara C. Etzel, Ph.D., Human Development & Family Life, KU
Judith M. Leblanc, Ph.D., Human Development & Family Life, KU

Project 3.1: Programming successful classroom transition: Assessment of children's survival skills and classroom requirements.
PIs: Judith Carta, Ph.D., Juniper Gardens Children's Project, KU
Jane B. Atwater, Juniper Gardens Children's Project, KU
Charles R. Greenwood, Ph.D., Juniper Gardens Children's Project, KU

Project 3.2: Promoting successful transition to the primary grades: Prediction of reading problems in children with speech and language disabilities.
PI: Hugh W. Catts, Ph.D., Speech-Language-Hearing Department, KU

Project 4.1: Assessing concerns of families in transiton and promoting family directed problem-solving.
PIs: Yolanda Suarez, Ph.D., Life Span Institute, KU
Stephen B. Fawcett, Ph.D., Human Development & Family Life, KU

Project 4.2: Role of professionals in successful transitions.
PI: Winnie Dunn, Ph.D., Occupational Therapy, KU Medical Center

Project 5.0: The longitudinal study of families and children in transition.
PIs: Marion O'Brien, Ph.D., Human Development & Family Life, KU
Mabel L. Rice, Ph.D., Speech-Language-Hearing, KU
Judith E. Thiele, Ph.D., formerly with the Child Development Unit, KU Medical Center

NATIONAL ADVISORY BOARD

Paula Beckman, Ph.D., Dept. of Special Education, University of Maryland
James Gallagher, Ph.D., Carolina Policy Studies Program, University of North Carolina-Chapel Hill
Ron Gallimore, Ph.D., Socio-Behavioral Group, University of California-Los Angeles
Michael Guralnick, Ph.D., Child Development & Mental Retardation Center, University of Washington
Shirley Heath, Ph.D., Stanford Humanities Center, Stanford University
Mary McGonigel, Ph.D.
Florene M. Poyadue, Parents Helping Parents, Inc., San Jose, CA
Pascal Trohanis, Ph.D., NEC*TAS, University of North Carolina-Chapel Hill

REGIONAL ADVISORY BOARD

William Bartholome, M.D., Pediatrics Dept., KU Medical Center
Carol Dermyer, Kansas State Board of Education, Topeka, KS
Patty Gerdel, Families Together, Inc., Topeka, KS
Donald Herbal, Ph.D., Special Services, Lawrence (KS) School District #497
Frances Horowitz, Ph.D., former Vice Chancellor, KU
Aletha Huston, Ph.D., Human Development & Family Life, KU
Edward Meyen, Ph.D., Ex. Vice Chancellor, KU
Judith Moler, J.D., Kansas Action for Children, Topeka, KS
Nancy Peterson, Ph.D., Special Education Department, KU
Lucile Paden, Ph.D., Past Kansas Education Specialist
Terrance Riordan, M.D., Lawrence, KS
Kay Rytting, Language Acquisition Preschool Program Parent, Topeka, KS
Richard L. Schiefelbusch, Ph.D., Institute for Life Span Studies, KU
Jan Sheldon, Ph.D., Edna Hill Child Development Laboratory, KU
James Sherman, Ph.D., Human Development & Family Life, KU
Linda Thurston, Ph.D., Office of Education, Kansas State University
William Topper, M.D., former Neonatology director, KU Medical Center
Virginia Tucker, M.D., former Medical director, State of Kansas
Ann Turnbull, Ed.D., Special Education Department, KU
Richard Whelan, Ph.D., Education Department, KU

11. INSTITUTE IMPACT

There is reason to believe that the collective endeavors of the Early Childhood Research Institute on Transitions have had considerable impact on the following audiences: practitioners, faculty who train practitioners, fellow scientists and scholars, policy makers, and members of the general public who are interested in the provision of services for young children with disabilities. Indicators of that impact can be found in quantitative descriptions of conventional methods of disseminating findings, in the preparation of practitioners, and in qualitative characterizations of important developments.

DISSEMINATION INDICATORS

Publication in professional journals, books, and chapters is a way to ensure that findings are available to a broad professional audience, and will be available for a number of years. A total of 113 papers have appeared in refereed publications, in addition to 70 other articles, books and chapters. These publications will serve as archival records of the work of the Institute, and thus will sustain an impact into the future.

Presentations at professional meetings are ways to impact on the scientists and practitioners in attendance. This mode of impact has been particularly fruitful for KECRI, with over 300 conference presentations and other formal lectures nationwide.

Another important way to impact professional practice is to present **inservice and preservice workshops and seminars to professionals and trainees**. In total, there have been 192 such presentations. Assuming an average audience of 40 to 50 persons (probably a low average for such undertakings), we can assume that over 8,000 professionals in practice or in training heard of the work of KECRI in this manner.

A rather immediate way to impact on future practitioners and scholars is to provide **direct training**. The graduate trainees affiliated with KECRI have had direct experience in the transition issues studied, the research methods, the results, and the remaining issues. All together, a total of 63 graduate trainees participated in the work of KECRI, along with an additional 34 undergraduate and graduate student research assistants. The graduates of the traineeships include students now in positions of higher education, clinical positions, private practice, teachers, and early childhood educators. The trainee graduates, then, serve as potential impact sources into the foreseeable future.

Another indicator of impact is the award of **outreach funding from EEPCD for implementation of transition strategies and training of practitioners** in those strategies. Two of the KECRI-affiliated projects received such awards: Project 2.2, involving the placement of children with severe and profound multiple disabilities into mainstream preschools and child care programs (Thompson & Wegner) and Project 3.1, involving the assessment of children's survival skills and classroom requirements (Carta et al.). These ongoing outreach projects will extend the impact of the KECRI findings in the practices of teachers and other service providers.

A final conventional index of impact is the development of newsletters, designed to dissemination information to policy makers, practitioners, scientists, and the general public. A total of four newsletters were published and disseminated over the course of the KECRI, to a total nationwide audience of 4,500 by the fifth year of the Institute. Requests for these newsletters were numerous, and continue to come in. They include requests from individuals to receive the newsletters, requests from an individual to have the newsletter sent to all members of their group or organization (e.g., all local special education directors in a state), and requests from a group for permission to use an issue of the newsletter in pre- or inservice training in their organization (e.g. in a transitions workgroup in an early childhood services cooperative).

SIGNIFICANT ADVANCES

Sometimes the most lasting impact is accomplished by significant advances in science or practice. Such advances are best evaluated after the passage of some time, insofar as determination of lasting value requires a certain distance of perspective. At the risk of predictive error, several accomplishments are noted here that seem to show promise of significant contributions to our understanding of children with disabilities or procedures for intervention.

One candidate is the development of the model of Social Consequences of Language Impairment that has been articulated in the work of Rice and Wilcox in Project 2.3, dealing with the verbal interactive skills of young children. In a series of studies and reports, this team is arguing that young children with speech and language impairments are also at risk for the development of peer friendship networks and other early social skills. This account is of interest to scholars because it helps sort out the ways in which early language and social development are intertwined. Of interest to practitioners is the fact that the combination of language impairments and restricted social participation may lead to considerable risk for successful transition at school entry when children enter kindergarten.

Hugh Catts's (Project 3.2) work with the transition into reading provides important indicators of early risk, in the form of children's speech and language skills prior to the age of reading instruction. These findings are of interest to scholars interested in the factors that contribute to reading success, and the screening instrument developed in this project for early identification of potential reading difficulties is of interest to practitioners who want to provide early intervention before school age as a way of preventing problems at the time of transition to literacy.

The use of video materials to prepare practitioners and parents for transitions was pioneered by McCluskey-Fawcett and O'Brien for babies going home from the Neonatal Intensive Care Unit. These videotapes have attracted a great deal of interest from parents and practitioners around the country, and have considerable promise for the development of related materials. A complementary set of studies by Meck (Project 1.2) has resulted in written transition planning materials to help prepare NICU staff and families for infants' transition home.

The work of Thompson and Wegner (Project 2.2) has attracted national interest as an example of successful full inclusion programming for children with severe and profound multiple disabilities. Most importantly, this project documents the kind of staff preparation essential for a successful transition from a special classroom to a full inclusion setting.

Identification and description of the "classroom survival skills" that young children need in preschool and kindergarten settings is documented by the work of Carta et al. (Project 3.1). Essential to this endeavor is the development of a robust measurement system, the ACCESS observation system. The scientific and practical value of ACCESS is evident in the many studies and presentations reported by this very productive team of researchers.

The work of Winnie Dunn in Project 4.2 is unique for the close inspection of the ways in which multidisciplinary teams carry out IEP planning. Her descriptions of the roles of parents and professionals on the team, the procedures of team meetings, and the product of the written IEP documents, and her findings regarding the treatment of transition issues in meetings and IEP documents before and after intervention, carry important information for both practitioners and parents. The practical significance of this new evidence is obvious, and her findings are much needed as a guide for the efforts of cross-disciplinary service teams.

Finally, the FACT study has considerable potential import for scholarship and practice, as the first effort to follow a group of children at risk for disability and developmental delay from birth throughout their early childhood years with a focus on service delivery and developmental outcomes. Among the important findings are documentation of a high rate of clinically significant delays on developmental indices for children who are at risk because of conditions surrounding their birth, while at the same time, many of these children were not enrolled in any form of service delivery. Ongoing study of these children and their families will clarify further the discrepancies between child status, family circumstances and service provision, and the apparent reasons for inadequate or nonexistent services.

All in all, considering the conventional indices for impact, and the possible scientific and practical advances, there is good reason to believe that overall the Kansas Early Childhood Research Institute on Transitions will have a significant impact on our understanding of children who have disabilities or are at risk for developmental difficulties and their families, and on our ability to provide optimal services at times of transitions and beyond.